पुस्तक-विवरण की तिथि नीचे अंकित है। इस तिथि सहित ३० वें दिन यह पुस्तक पुस्तकालय में वापिस आ जानी चाहिए। अन्यथा ५० पैसे प्रति दिन के हिसाब से विलम्ब-दण्ड लगेगा।

A PEEP INTO THE DARK PAST

OR

A History of the White Race

BY

BHAGWAN DASS PATHAK

AUTHOR OF

"THE HINDU ARYAN ASTRONOMY"

OR

"THE ANTIQUITY OF ARYAN RACE"

Etc. Etc.

PUBLISHED BY THE AUTHOR.

PRINTED

AT THE

MITRA PRESS. BAREILLY.

Price Rs. 3/- only.

ERRATA.

Page.	Line.	
vi.	34	Read '81' for '79'.
viii.	30	Read 'course' for 'couse'.
xv.	27	Read 'Shatbhishag' for 'Shatvisha'.
xvi.	24	Read 'Vishnu' for 'Vshnu'.
,,	32	Read 'father's' for 'fathr's'.
xviii.	7	Read 'after' for 'alter'.
,,	25	Read '47.589 for '74.589'
xx.	13	Read '28' for '18'.
,,	27	Read 'Shatpath' for 'Shapath'.
xxv.	25	Read '553·0082760' for '5530082760'.
,,	31,32 33	Read 'periods' for 'cycles'.
xxvi.	15	Read '79' for '72'
2	32	Insert 'highly' before the word 'figurative'.
3	3	Read 'generations' for 'generation'.
4	8	Insert 'a' before the word 'translation'.
,,	25	Read 'differed' for 'differ'
9	6	Read '(II-27-14.' for '(II-27.14)'
13	10	Insert 'The word Arka which actually means 'sun' has wrongly been translated to mean 'lightning' after the word 'explanation'.
14	15	Read 'thou' for though'.
16	4	Read 'who' for 'which'
18	6	Insert 'the' before 'arctic'.
19	3	Insert 'in the Rv. The word Akta has, however, been wrongly translated to' between the words 'to' and 'mean'.
20	13	Insert 'the' before the word 'distance'.
24	3	Insert the word 'head of' before the word 'heaven'.

Page.	Line.	(Second)
25	14	Omit the word 'the' before the word 'joy'
26	4	Insert the word 'the' before the word 'sky's'.
	5	Read 'have' for 'here'.
30	9	Read 'sun' for 'moon'.
	10	Read 'moon' for 'sun'
	15	Read 'sun' for 'moon' and 'winter night' for 'summer day'.
	16	Read 'moon's' for 'sun's.
	17	Read 'long day' for 'long night'.
31	23	Read 'moon is actually meant in the above verse' for 'word Soma actually conveys the meaning moon'.
37	11	Insert 'climatic' before the word 'conditions'.
	27	Read 'then' for 'there'.
38	9	Read 'X-188-12' for 'X-188-112'.
39	27	Read 'Vivasvan' for 'Vaisvanara'.
42	5	Insert 'and' after the word 'night'.
	6	Insert 'of' between the words 'and' and 'the'
	22	Read 'snatched' for 'snatcned'.
46	12	Omit 'of' after the word 'path'.
	23	Insert 'Margasira has now no connection with the spring season' after the word 'seasons'
48	21	Insert 'Adonis another sungod of the ancient Greeks, used to remain for a few months in the under world every year' after the word 'hours'
53	4	Read 'III-51-2' for '11152-2' ?
58	12	Insert the words 'absence of' between the words 'the' and 'phenomenon'.

Page.	Line.	
60	24	Insert 'day' after 'long'.
61	20	Read 'goldlike' for 'godlike'.
67	2	Read 'verse' for 'verses'
72	12	Read 'VIII·4' for 'VII-4'.
	17	Insert 'Rudra' between 'Vayu' and 'Aryaman'.
	21	Omit 'cases' before 'it'.
73	8	Read 'banded' for 'banaed'.
74	19	Read 'eternal for 'sternal' and 'Asura's' for 'Asuar's'.
78	11	Read 'IX-36-3' for 'IV-36-3'.
	15	Read 'heavenly' for 'heavently'.
79	11	Read 'Aghas' for 'Nagas'.
	19	Insert 'or continually' after 'temporarily'
82	10&12	Read 'dogs' for 'gods'.
83	16	Insert 'the' after 'end of'.
88	7	Read 'IV-50 4' for 'IV-50-2'.
	22	Read 'X-68-11' for 'X-65-11'.
92	7	Insert 'third' before the word 'part'.
95	18	Read 'IV-16-2' for 'VI-16-2'.
101	16	Read 'dawn' for 'moon'.
106	4	Insert 'and' after 'Magha'.
	22 & 23	Insert 'upward and the downward movements of the sun during the' between the words 'the' & 'long'
111	26	Read 'to' for 'do'
113	8&9	Read 'Hipponoos' for 'Hiphonoos'.
114	8	Insert 'water' after 'pouring down'
	14	Insert 'upper' before 'part'.
	23	Read 'Ida' for 'Ila'.
120	22	Read 'Perseus' for 'Preseus'.
	27	Read 'seated' for 'stated'.
122	5	Read 'Shatbhishag' for 'Shatvisha'.

Page.	Line.	
125	7 & 8	Insert 'subsequently' between 'started' and 'when'.
126	27	Read 'have' for 'has'.
128	12	Read 'stars situated' for 'star's situation'
	17	Insert 'whether in its present form or another' after the word 'people'.
134	17	Read 'cycle' for 'era'.
136	5	Read 'cycle' for 'era'.
139	9	Read 'moon' for 'moons'.
142	14	Read 'festival' for 'festmet'.
143	11	Read 'ceased for 'used'.
145	14	Read 'era' for 'eras'.
152	20	Read '312·674' for '312674'.
157	27	Insert 'with' after 'B.C.' & omit fullstop
	28	Insert 'which' after 'conjunction'.
161	6	Read 'day' for 'night'.
164	30	Read 'change' for 'charge'.
168	3	Read 'at' for 'to'.
170	10	Read 'elapsed' for 'lapsed'.
171	6	Omit 'mid' after 'long'.
	13	Read 'dawns for dawn'.
173	16	Read 'Bhanu' for 'Bhhnu'.
175	31	Omit 'a after 'there'.
176	8	Omit '14' before 'chinese'.
178	4	Read '29.106' for '29106'.
180	16	Read '8' for '18'.
	18	Read '10' for '4'
	27	Read 'sign' for 'night'.
187	14	Read '10·731x8 = 85·848' for '10.728x8 = 85·824'.
188	27	Read 'in' for 'on'.

PREFACE.

An attempt has been made in this book to trace the ancient history of the White people as well as of the place of their craddle. This could only be done by means of the Vedas and other ancient works, like the Zend Avesta, as well as by ancient traditions, old eras and primitive constellations. The last are, in fact, very valuable pictorial records of the remote past ages which, unfortunately, have so long remained unexplained.

The Vedas are admittedly the oldest ancient writings of the human race; but there are insurmoutable difficulties in their correct interpretation at places, the foremost of them being an ignorance of the locality or localities where they were composed. The existing translations of these writings are, no doubt, commendable; but they would have been much more valuable if the translators had the necessary knowledge of the environments in which the composition of the Vedic hymns took place. Thus another object of my presenting this book is to facilitate the task of Vedic translation, in case my conclusions are correct.

There are verses in the Vedas which clearly show that the Vedic people were very much afraid of darkness, that the appearance of dawn was considered as life and breath and that the period, during which prayers had to be offered for sunlight, was so long that the priests, employed for the purpose, used to be worn out by constant service.

There are passages in the Vedas in which temporary cessation of days and nights and the appearance of the first dawn are alluded to; while in certain places such strange expressions as 'stolen dawns', 'immature dawns' and 'successive appearance of dawns and nights' are employed. A Vedic deity is described as having performed a great deed by which the sun and the moon used to ascend to heaven in successions. Some divinities are spoken of as 'finders of days' and 'fighters for light'; while at places there are such odd expressions 'as the first appearance of days and dawns'. In a Vedic verse the sun is called *ajara*, or the ever-young, while travelling in Vrihaddiva or the larger heaven whereas, in another verse, he is supposed to voyage in a boat on a luminous ocean. (A similar tradition is to be found among the Greeks as well). The circling motion of the sun is mentioned in the Rigveda as well as in the Puranas, where the sun is said to move round Meru (or the pole). This strange motion of the sun is also supported by such statements in the Rigveda as the 'enlargement of the sun's path and the movement of his chariot in every side'. In a hymn, gods are asked to give the people nights and mornings, presumably during the long day.

The above-mentioned strange phenomena are possible only in the arctic region where the sun in summer never rises or sets, but performs a kind of spiral movement and remains invisible during the winter for days and even for months. The immature dawns, above referred to, appear only in the arctic region towards the close of the long winter night-at an interval of every twenty-four hours, without the sun's uprising. Every successive dawn is brihg-

ter than the former, and this phenomenon continues till the appearance of the sun.

Moreover, the description of the divinities, as given in the Vedas, is such as to suggest their connection with some distant country having unusual climatic and physical conditions and, in fact, their conception was possible only in an arctic region. I have given an exhaustive chapter on Vedic divinities in this book with a double purpose. While it may be of special interest to scholars of Vedic literature it will also serve to indicate the arctic nature of the place where those divinities were conceived.

The arctic zodiac was, thus, divided into three parts, called *lokas*, which were as follows:—

(1) *Asura loka*, or the circumpolar part of the zodiac, where the celestial deities never used to rise or set and were, therefore, considered immortal.—

(2) *Asurya loka* or *Goloka* or *Naraka* (dark regions), which was below the horizon. The sun, consequently, remained invisible to the arctic people while passing through it,—and,

(3) *Mrityuloka* or the region of the mortals. It covered the rest of the zodiac wherein the heavenly bodies used to rise and set and were, therefore, supposed to be subject to birth and rebirth. (This, perhaps, was the origin of the theory of the transmigration of souls).

This threefold division of the zodiac gave rise to three main religious sections of the arctic people, *viz.*, Asuras, Nagas, and Aryas respectively; and

these started their calendars from their respective parts of the zodiac, beginning from the long day, the long night and the first sunrise.

The worship of the visible gods of the bright world and the invisible powers of the underworld, which originated in the arctic region, has come down to the present times in some form or the other; and, in fact, the divergences in the modern religions are mostly due to it. The outcome of the former kind of worship (or *saguna upasana*) was idol-worship, where as the latter (or *nirguna upasana*) led to various abstract forms of devotion. When the ancients immigrated into some non-arctic region and the circumpolar part of the zodiac disappeared, the Asura form of worship also merged into these two forms.

The theory of the arctic home of the White Race explains also the strange conception of the gods of the ancient Greeks who were supposed to swallow their children and to afterwards disgorge them. The disappearance of dawns, the moon and ordinary days, as well as of the stars and the planets, during the long summer day, led to such beliefs among the primitive arctic people. Simlarly, Tamuz and Osiris, the sungods of the Phoenicians and the ancient Egyptians respectively, were believed to die in autumn and revive in spring; while some other nations, including the Hindus, suppose their sungods to sleep for about four months. Others, however, represented them as kine of light who used to be shut up in the under region during the long night; hence, the Egyptian gods of light were figured as cow-headed: and this was the origin of cow-worship. The Hindu festivals

of *Godhana*, *Govatsa*, etc. were the outcome of this belief.

The circumpolar part of the zodiac is described in various ways in the Rigveda. It was a place of sacrifice during the long day, and a place of the assembly of gods, who were supposed to enjoy themselves by dancing, (which seems to be the origin of ball-dancing and the Hindu *rasa-lila*). Since, during the long day, gods had no cover of darkness, they were often represented as nude as among the modern Jains; and this was the reason that Vishnu is called 'the naked one' in the Rigveda. This region was regarded as a forest on fire by the Agni-worshippers, who offered animal and burnt sacrifices, and it may be inferred that the Holi festival of the Hindus is an old relic thereof. But in many places in the Vedas, it is described as a billowy ocean with floating glaciers, the disappearance whereof, in consequence of the southward movements of the arctic people, led them to believe in the downpour of the waters of this ocean. This was, I think, the origin of the traditions about the great universal Deluge, the occurrence of which is not, however, supported by geological researches.

In the same way, the present beliefs about the creation of the world at the begining of the creation eras of some of the ancient nations are also due to misinterpretations of the old texts of their sacred books. In fact, as I have explained in this book, these eras refer to the creation of asterisms, signs etc. of the nations concerned. Further, these eras are not the original ones, as it was the practice among the ancients to renew these eras when there

was a change of 90 degrees or similar recognized distances in the position of the zodiac, owing to the Law of the Precession of Equinoxes.

As regards the situation of the original abode of the arctic people, there are evidences to show that they had first selected for the point of their meridian a place where the long night used to last for 100 solar days, but there are reasons to believe that it was subsequently changed. Whether the change or changes were due to their emigrations or to some astronomical and other conveniences, I am unable to say. The situation of the place of the original meridian was about $74\frac{8}{15}$ degrees north lattitude and $73\frac{1}{60}$ longitude east of Greenwich. There is no information available as to the probable period when the White Race first settled in the arctic regions.

As regards the creation eras of some ancient nations it is remarkable that they were based on certain sacred days of the Hindus which are called Kalpadi because they were connected with the Kalpas or the creation eras. These dates coincided with the sidereal points which were situated at a distance of 16·160, 42·177, 183·883, 221·120, 253·558, 314·859, and 351·608 degrees from the spring equinoctial point* of 1913 A.D. The first point (16·160) was the last con-

---

*Sun at winter solstice, or the beginning of its northern course—on or about December 23;

Sun at summer solstice or the beginning of its southern course—on or about June 23;

Sun at spring and autumnal equinoctial points—on or about March 23 and September 23 respectively.

These points are subject to retrograde movement, owing to Precession as compared with fixed stars: one degree in about 72 years at present and about 79 years in 25053 B.C.

junction of the sun and the moon before the long summer day in 25653 B. C. or at the beginning of the Egyptian era. The second, third and the sixth coinci ded with the conjunctions of the sun and the moon in the third year of the aforesaid era. The fourth, fifth and the seventh also coincided with the conjunctions of the sun and the moon in the ninth, sixth, and the fifth year respectively of the Egyptian era. The second point (42·177°) was then the starting point of a lunar calendar connected with the beginning of the long summer day. The full moon of its second month which coincided with the point 85·835° used to occur about seven solar days before the summer solstice (24th June). When this point became the commencement of the southern course of the sun, the Samaritan branch of the Arctic Race started its first creation era. The arctic forefathers of the ancient Chaldeans began their first era when the third point (183·883°) became the beginning of the long winter night. The southern course of the sun then used to commence from 53·883° The fourth point(221·120°)was situated 1½ degrees from the starting point of that part of the sun's path which lay beyond the horizon of the Arctic people. This was evidently the starting point of the Romans' lunar calendar as they began their tropical and sidereal calendars four lunar months later i e. from 337·542° The latter used to begin 15 solar days later than the first rising of the sun after the long arctic night. The original Roman calendar consisted of ten parts (called Viras—vide Decemvir) of 35 solar days each. The beginning of their fourth month of 30 solar days coincided with the end of the first quarter of the long day and it was accordingly named June, after the goddess Juno, (the imprisoned Dawn). 75 solar days later, or on the

Ides of August, was celebrated the festival in honour of Diana (victorious or the liberated Dawn). The first month (March), which then coincided with a Roman sign, began 15 solar days after the first sunrise. The latter was probably the starting point of a Vira which was named after their deity Janus (Vedic Janita). At the beginning of November, ceremonies connected with the departing Devas and the sun were held on the dates which are now celebrated as All Saints' and All Souls' Days.

The Prajapatya tribe of the arctic race used the lunar calendar beginning from the fifth point (253·558°) The ancient Greeks, the Mexicans and probably the Jews also were the off-shoots of this tribe. The Mexicans started their first era when the fifth point (253·558°) reached the spring equinoctial point; while the first era of the Greeks started earlier when a sign of Prajapatya (193 558°) marked the beginning of the long arctic night. The sixth point (314·859°) was situated about 8 degrees before the first rising point of the sun, and the calendar beginning from this point used therefore to commence about 8 solar days earlier than the first rising of the sun. This calendar was used by the Vedic tribe of the arctic race and it was called Dhanishtha calendar. These people used short periods of eight solar days each called *ashtakas*. The seventh point (351·608°) was situated at a distance of about 11 degrees from the spring equinoctial point and when the former itself became the spring equinoctial point in the couse of time owing to the precession of equinoxes, the Phoenician tribe of the Arctic race started its first creation era the last cycle of which was adopted by the Christian nations in

4004 B. C as their own creation era. There were therefore seven main tribes of the Arctic race the creation eras of which have been referred to above. The arctic forefathers of the ancient Babylonians. Arabs, Malabarians, Kauravas, and probably of the Parsis as well were the off-shoots of the Egyptian tribe. The Jews, Greeks and the Mexicans were the branches of Prajapatya tribe while Scythians or sakas and Panchalas had their origin from the Roman tribe.

Certain lunar days called Manwadi have also come down to the present time which are held sacred by the Hindus owing to their alleged connection with the fourteen Manus. There are reasons to believe that originally the Manus numbered more than this figure. According to the astronomical works of the Hindus the period of a Kalpa is divided into fourteen Manus while according to the theological works the Manus were the progenators of the Aryan race. These lunar days, however, suit the various cycles of creation eras mentioned above as will appear from this book.

With the exception of the eras of the Great Deluge, I have discussed thoroughly the creation eras and their cycles in this book. The years of the Great Deluge according to Jewish and the ancient Samaritans were 2348 B. C. and 2998 B. C. respectively.

Most of the tribes of the white arctic race lived in three countries of the arctic region including their original abode in three different periods. There were 3 generations of the gods of the ancient Greeks, while Yima (Vedic Yama) of the ancient Parsis extended the earth thrice. The Hindus believe that their god Vishnu and the goddess Durga assumed human forms thrice in order to kill three generations of

demons headed by two brothers in each case. The latter were evidently the powers who were supposed to cause the long summer day and the long winter night in the arctic region. According to other versions the power causing the long night was forced to leave his home (the sun's path beyond the horizon) e. g. Kali Nag (serpent forced by Sri Krishna). The ancients designed a constellation called Hydra to represent Kali in Heaven the length of which is 100 degrees.

One of the tribes worshipped the power of darkness called Kali by the Hindus and Satan by the western nations. His birth and anniversary according to the Hindus coincides with the 13th lunar day following the full moon of the Hindu month of Sravan. The sect called Aghoris worship this power for 3 days viz. on 12th to 14th lunar days. This tribe evidently emigrated from that part of the arctic region where the long winter night used to last for three lunar days.

The power who was supposed to cause the long summer day was called Nahush by the Hindus. This was supposed to have been transformed into a dragon (and represented by the old constellation of Draco) when the white race left the arctic region. Some of the arctic tribes designed constellations viz. the Pitcher and the southern Fish to represent the circumpolar part of zodiac when they left their arctic abode, while the constellations called Virgin, Crater, and Carvus were designed by some others for the same purpose.

Most of the arctic tribes passed through India and

left their colonies here in course of their immigrations. Thus we find many tribes and sub-classes amongst the Hindus, which are not infrequently opposed to each other (e. g. the cow-worshippers of the Deva sect and flesh eaters of the Asura and the Naga sects). Precisely for the same reason we find that the festivals of many ancient nations are still observed by the Hindus.

According to western scholars, the Jews belonged to the Semitic race and did not form part of the stock to which the Aryans belonged. It is, however, strange that the Vedic custom of *niyoga*, or temporary widow-marriage for the sake of getting heirs to the deceased husband, was prevalant among the early Jews as stated in the Old Testament and there was also a similarity in their calendars, as I have already shown. I think that they, like the Arabs, Egyptians etc. belonged to the White Race and settled in the country of the aboriginal Semitic races whose language and culture they adopted. Moses, Rama and Krishna were, I think, arctic deities, and some historical personages of noble deeds and virtues came to be named after them in later times. Possibly, Abraham was called after *Abrahma*, which is the antithesis of Brahma, the Vedic god of the bright world.

Most of the Hindu festivalss are of the arctic origin and they give some information about the state of society and the religious ideas of the arctic people. Those originated at the beginning of the Egyptian era are *Gopashtami* and *Saloono* The former used to occur at the commencement of the long arctic night and it was held in honour of the departing powers of

light figuratively called kine in the Vedas. Cows are still worshipped and blankets given to herdsmen on this day. The worship of Vishnu under the name of *Gopal* originated at this time: The second festival which used to occur at the close of the long summer day was held in honour of the reappearance of Soma or the moon. Priests renewed their sacred thread, the emblem of the circumpolar part of the zodiac. The festival originally coincided with the middle of August and it was held by the Arctic forefathers of the Romans in honour of dawn (Diana) which was about to reappear. They used to worship also the first dawn after the long night and the vanished dawn of the long day and called them Janus and Juno respectively. The All Souls' and All Saints' days of the Christians preceded the long night, while Christmas coincided with the winter solstice and occurred a week before the end of a lunar month of Romans.

The idea of the sun's supposed death at the beginning of the long night was conceived by some of the arctic people when the Parsi era was started. The Hindu festival in honour of Yama (or Yima of the Parsis) preceded the long night at the time. Yama was the guest of his sister on this day. It was believed by the ancient Egyptians that the sun-god Osiris was nursed by his sister at his deathbed. The Hindu festival of Diwali preceded the long night when the Samaritan tribe started their era. On the following day the mountain called Govardhan is worshipped. It was evidently the Vedic mountain cave wherein the supposed kine of light used to take shelter at the beginning of the long night. The midnight of Diwali was the time of birth of the goddess Kali who was

evidently the divinity of the long night.

The lunar day which coincided with the beginning of the long night at the commencement of the era of the Kambojas is associated with the Hell. Kalki, an incarnation of Vishnu, was born at the close of the long day to destroy the demons or the powers of darkness, and 200 solar days later or twenty days after the sun's first rising he was worshipped owing apparently to his victory over his enemies. When there was a change of 60° in the position of the zodiac a cycle of this era was started by this nation. The beginning of the long night then coincided with the birth day of Kali or the Satan. When there was a further change of 20° in the position of the zodiac another cycle was started. Narsinha, an incarnation of Vishnu, was born at the close of the long day to save Prahlad or the Moon from the clutches of his father, the supposed ruler of the long day.

There is another Hindu festival, called Govatsa, which is connected with the worship of kine. It used to occur at the beginning of the long arctic night when the Phoenician branch started their era. This shows that the old belief about the kine of light was still prevalent among a section of the arctic people. When there was a change of 90° in the position of the zodiac, this nation started a cycle of its era; but the Hindu festival which then used to occur at the beginning of the long night was called Kal-Ratri or the night of (sun's) death (8th day following the full moon of Ashadh) (c. f. the Jewish and the Egyptian festivals in connection with the deaths of their sun-gods named Tamuz and Osiris respectively).

The world era of the ancient Greeks was originally started when the Hindu festival of Mahashtami coincided with the beginning of the long arctic night. It is noticeable that Maha Nisha or the long night is still worshipped on this day. The full moon of the Hindu month of Ashadh used to occur at the commencement of the long arctic night when the first era of the ancient Mexicans began. The god Siva is supposed by the Hindus to go to sleep on this day. According to the belief of the Vaishnava sect of the Hindus the god Vishnu's long sleep of about four months begins four days previous to the aforesaid full moon. The festival connected with Vishnu's sleep was based on the Kali era.

It was once the belief of the arctic people that the sun-god used to be born at the beginning of every long night and his mother (the last dawn of the bright world) entrusted the child to the care of the queen of the under-world or the wife of the Herdsman of the kine of light. The legends of Hindu Sri Krishna and the Greek god Adonis were based on this belief. When the era of the Panchalas was started the birth day of Sri Krishna used to occur at the beginning of the long arctic night.

As regards the antiquity of the Vedas, the conjectures of the western scholars, based on a comparison of the Vedic, Brahmanic and classical Sanskrit, cannot be considered trustworthy. The Vedic hymns according to traditions, were handed down orally from generation to generation, and consequently called *Sruti* till they were put in writing and classified and arranged by Vyasa. The original hymns, which are

clearly of arctic origin, must have undergone considerable linguistic and metrical changes in their oral transmission from one generation to another. What is more significant therefore, with regards to this question is the antiquity of the ideas, customs and civilisation., which the Vedas have to present before us, than merely their language. I have proved the arctic origin of the White Race chiefly from the Vedas and the following facts lend further support to the arctic origin of the Vedas:—

(a) Five celestial bulls are alluded to in the Rigveda, which I think represented the five signs of the zodiac consisting of 20° each, which covered the circumpolar region in 25653 B. C..

(b) The chief god of the ancient Egyptians was a dual deity called Amon-Ra. This was also the case at the beginning of their era in the arctic region. This was the reason that the sign beginning with the summer solstitial point in 25653 B. C. is still called Mithun or the Twins. The two asterisms lying on both the sides of this point were Invaka and Vahu (now called Mrigshira and Ardra). Their presiding deities are Soma and Rudra respectively and it is noticeable that a dual deity called Soma-Rudra is often mentioned in the Vedas. Similarly Mitra-Varuna the most important dual deities of the Vedas were conceived when the nakshatras called Anuradha and Shatvisha marked the beginning and the end of the circumpolar part of the arctic zodiac. (There were dual deities also in the non-arctic literature. As for instance Nar and Narayan were the Puranic deities. Nar was the sun-god of the ordinary days while Narayan or the

one whose abode was in waters was the sun-god of the long summer day as the ancients believed that the circumpolar part of the zodiac wherein the sun never used to rise or set was a celestial ocean). Vedas are called "Trayi" probably because they contain the knowledge of the powers ruling the three parts of the Heaven (Asuraloka, Goloka or Narak and Mrityu-loka).

I have not discussed the ancient history of India in this book owing to the insufficiency of the available material, but I mention here some important points on this subject. The people of the Naga tribe of the Arctic race who used to worship their gods in the form of a Naga or serpent had settled in India long before the immigration of Aryas or Deva worshippers into that country Some Bengali families still bear the surname of Naga, and the Naga hills in the Eastern Bengal were probably called after the name of this race. A Naga temple still exists in Allahabad and the hill in the Tehri State named Sem Mukhem is the place of pilgrimage of the Naga worshippers. The city in the Punjab called Taksh shila or the Taxila of the Greeks was named after Takshak, the title of the Naga Kings. According to Vishnu Puran Arayas used to marry Naga girls and it is stated in the Mahabharat that Arjun the hero of the great war had a Naga wife, who was the daughter of the King of Manipur in the Eastern Bengal, and that Hastanapur, the capital of the Kuru kings, was also called Nagpur. It is alleged that the grandson of this hero died of the bite of a serpent called Takshak and his son avenged his father's death by holding a sacrifice in Taksh-shila for the destruction of serpents,

but he could not complete the sacrifice owing to the intercession of a holy Brahman born of a Naga woman. It appears that his father actually died while fighting with the Nagas and he invaded their capital Taksh-shila and conquered their country. Takshak however escaped and probably fled to Egypt as appears from the fact that certain Egyptian kings used to wear a crown bearing the mark of a serpent.

The Hindi alphabets, called Devanagri, were designed, I believe according, to the sounds of the Devas' and Nagas' languages. A table showing 28 nakshatras beginning with Krittika, seven days of the week and 112 alphabets has come down to the present time from a very remote period. It contains five vowels as in the Roman scheme, 19 consonants with 4 inflections each (19+76) and 12 consonants without inflections. The latter are noted agains 4 nakshatras including Ardra (Orion) which are situated at a distance of 90° or a quarter of zodiac from one another. They are described as pillars of zodiac in the explanatory remarks of the table. I think therefore (notwithstanding what I said elsewhere) that the table was designed when the spring equinoctial point was in Ardra asterism. A list of 28 nakshatras beginning with Krittika is also given in the Atharvaveda and the Mahabharat. The words Agni, Bhanu aod Ayanam are inserted before Krittika, Ashlesha and Magha respectively. This shows that the first rising of the sun after the long arctic night used to take place in Krittika while the long day used to begin when the sun reached the end of Ashlesha and the beginning of Magha nakshatra. Agni or the first dawn and the Pitris or the departed souls are the presiding divini-

ties of Krittika and Magha respectively. They were then supposed to preside over these asterisms because the latter were respectively situated at the time at the beginning of the visible zodiac and its circumpolar part, the supposed abode of Pitris and of Bhanu or the sun of the long arctic day. The South-East direction was named *Agnaya* atter *Agni* owing to the latter's appearance after the long night from that direction. According to Brahmand Puran, the sun was born in Krittika and the moon in Visakha asterism which was situated at a distance of 90° from Magha. The above mentioned table was therefore designed in the arctic region where the long night lasted for a quarter of a year and the moon used to reappear after the long arctic day in Visakha asterism. The name of the grand son of Arjun and of the Kuru race to which he belonged as well as of the Naga race are mentioned in the Atharvaveda. The King Yudhisthira started his era in 2443 B.C., after the great war when the spring equinoctial point was situated at a distance of 60·446° from the same point of 1913 A.D. This point was also the beginning of Rohini nakshatra as appears from a statement in the Mahabharat. Krittika, therefore, used to begin from the sidereal point 74.589°. The table was therefore designed in about 4800 B.C. when the spring equinoctial point was in the middle of Ardra at the sidereal point (92·589°) I think that the art of writing was invented by the arctic people at about this time. The table in question was apparently revised at about the time when the great war of Mahabharat took place and the new alphabets representing the peculiar sounds of Nagas were designed and incorporated in this table.

I am also of opinion that the Sanskrit was manufactured from the various languages of the Deva, Asura and Naga worshippers at about this time and Vyasa arranged the Vedic hymns which had come down through these nations and divided them into 4 parts, the present Vedas. The 4th Veda was formerly called *Atharvangiras* because it was compiled from the hymns of *Atharva* by which name the priest of the Parsis who worshipped Asuras used to be called and of *Angira Muni* the priest of Deva worshippers. It is noticeable that the sidereal point which coincided with the spring equinoctial point in 4800 B. C. was almost the same which marked the beginning of the southern course of the sun at the commencement of the Egyptian and the Roman creation eras, while the Nakshatras of the Kuru race were identical with those of the Parsis.

There is a great affinity between Sanskrit and Zend and Indo-Germanic languages including Latin and Greek, while the first two alphabets of their schemes including that of the Arabic are the same in sound though not in form. The number of alphabets of the schemes of these nations was based on the astronomical point of view. The forefathers of the Arabs and probably of the Parsis designed 28 alphabets equal to the number of their asterisms.

The Greeks had 24 alphabets according to the number of half signs It is to be noted that the number of alphabets in the above mentioned table excluding those which have no inflections is also 24. The Latin and the Sanskrit languages have 26 and 52 alphabets respectively according to the number of fort-

nights and weeks in a year. (It is noticeable that in 39 sidereal years there are 52×39+7 weeks). The sounds in the aforesaid languages, not applicable to their alphabets, were made to represent by combining consonants, accents etc. The alphabets, of course, underwent changes in the course of time but not in their number and in the sounds of the first two letters. These facts show that all these nations were living in the same country in about 4800 B. C., when the art of writing was invented.

The nakshatras beginning with Krittika and starting from the point 47·589° were of two kinds consisting of 27 and 18 asterisms each. The former are mentioned in the works called Brahmans. The Roman asterisms I believe also numbered 27. Both these schemes started from the aforesaid sidereal point. The Roman sign of Lion began at a distance of 6 asterisms or 80° from that point while a full moon of the lunar calendar which was current at the beginning of the Greek era of the world almost coincided with that point. It appears, therefore that the above mentioned works were composed by persons belonging to the Roman tribe or its branches, while the authors of the works called Upnishads were Malabarians as I shall show later on. The works called Brahmans contain rituals of the two main sects of the arctic tribes, viz Deva and Adeva worshippers. Sha-path and Taittiriya Brahmans therefore related to the White and the Black Yajurveda respectively.

An astronomer named Vasisht based his work in 1905 B. C. on a lunar calendar the starting point of which almost coincided with the full moon of the 7th

month of the calendar current at beginning of the Jewish era. It is noticeable that the sun used to cause the long arctic night when reaching this point at the beginning of the original era of the Phoenicians. Vikram also started his era in 57 B. C. which was based on this calendar. A calendar beginning with the month of Vaisakh is mentioned in the Valmiki Ramayan in connection with the birth of Sri Ram Chandra which took place on the 9th lunar day of its 12th month. This fact shows that the calendar was also started from the 2nd month of the aforesaid calendar of the Jews as the birth day of Sri Ram Chandra suits this calendar according to solar reckoning. The period of the rainy season being Sravan to Kartik according to this book it is evident that the work could not have been composed earlier than 1600 B C.

As regards the time of composition of Mahabharat, the statements of Varah-Mihir and some other ancient authorities clearly show that King Yudhishthira was the ruler of India in 2448 B. C. This year was connected with an important astronomical event because the spring equinoctial point coincided in that year with the beginning of Rohini nakshatra of the scheme of 28 asterisms. It is stated in this book that the full moon of Kartik was Shardi because it coincided then in a leap year with the autumnal equinox. According to another statement the aforesaid king was born at noon of the full moon of Jyesth when the moon was in Jyesta asterism and the sun was in the mid-heaven or at the spring equinoctial point (23rd March). The year 2494 B. C. suits therefore as the year of his birth. The revision of the above men-

tioned scheme by reducing one asterism and the circumstances which led to it or also mentioned in this book. The first asterism of this revised scheme was Dhanishtha because its beginning coincided in about 1227 B. C. with the winter solstitial point, and the Magh was the first month. The date of Bhishma's death on the 8th day of this calendar suits the year 987 B. C. or some year close to it as it coincided then with the beginning of the northern course of the sun. The statement in Anugita of this work that Sravan was the first asterism refers to the list of nakshatras beginning with that asterism. This was the case in about 267 B. C. when winter solstitial point was at the beginning of the aforesaid asterism. The lunar calendar was the one beginning with the month of Margshira and the Hemant season as is described in Amarkosh. The sign of Ram was the one which has come down through the ancient Greeks and the beginning of which (30·446°) coincided at the time with the spring equinoctial point. The next sign (Bull) coincided at its beginning with the same point of 2448 B.C. when Yudhishthira was the king of India. These facts show that Mahabharat was composed some years after 2448 B. C. but it was enlarged from time to time. Similarly the Valmiki Ramayan also underwent changes in course of time.

The Malabarian era was started in 1176 B. C. from the beginning of the southern course of the sun which then coincided with the sign of Lion and the Magha nakshatra of another scheme. It also coincided with the sidereal point which was situated at a distance of 132·934° from the spring equinoctial point

of 1913 A. D. This was also the starting point of the Hijra era of the Muslims. It is however to be noted that the Arabs used the scheme of 28 asterisms while the Malabarians had 27 asterisms. The sign of Ram of this scheme began from the point 12·934° which was the starting point of the last Babylonian era. According to Maitrayani Upnishad the southern course of the sun used to begin from the commencement of Magha asterism and the zodiac was divided into 12 parts or signs and into 27 asterisms. Among the religious works the Vedas and the Upnishads (but not the Brahamanas) are mentioned in this book and it is also stated that there was a sect who followed the teachings of Brihaspati who neither believed in the Vedas nor in the future existence in the Hell or Paradise nor in rebirth. According to Brahmand Puran the spring and the autumnal equinoctial points were situated at the end of the signs of Ram and Libra respectively which was the case in 1176 B. C. It is also stated therein, that Aryas and Malechhas were the inhabitants of India at that time. The latter word which now means a polluted being originally meant a king in Asia Minor, vide Abu Malechh an ancient king of that country. Similarly the depressed class of sweepers is called Mehtar by Muslims, while the kings of Chitral used to bear this surname. This word as well as the word Mehta used in Gujrat are probably derived from a Sanskrit word which means 'the greatest'.

There was a long controversy among the oriental scholars as to the identity of Vikram the king of Gujrat or Malwa who started the Samvat era in 57 B.C. or 3 periods of 19 years each before the commen-

cement of the Christian era. It is remarkable that the full moon of the Kali month of Chaitra ended in both these years with the spring equinox. The Samvat calendar originally used to begin 6 lunar months earlier than at present and its starting sidereal point was 211·694° which coincides with October 1 and with the Hindu festival held in honour of cows. It is also noticeable that the sun used to cause the long arctic night on reaching this point when the era of Phoenicians was originally started and that the Christian era of creation began from the last cycle of the Phoenicians' era. It appears therefore that Vikram was probably a Phoenician. The Gujratis and Chitralis probably belong to this tribe.

According to Varah Mihira, five kinds of calendars including the tropical one called Romak were used in India. Of these five, the calendar of Vasishta has already been alluded to while the Vedic calendar has been dealt with in this book. Lat deva wrote a commentary in 505 A. D. on the work of Paulis (probably a Scythian) the starting point of which 19 642° coincided at the time with the spring equinoctial point. He stated that the difference between these two points was once $23\frac{1}{3}$ degrees or $1\frac{3}{4}$ nakshatras. This was in fact the case in 1179 B.C. when the southern course of the sun used to begin with the middle of Aslesha according to the Scythian scheme of 27 nakshatras, a fact also stated by Parasar. The end of the 7th month of this (Lat deva's) calendar then almost coincided with the autumnal equinox. On the same consideration the ancient Jews revised their old calendar and adopted the present one in 1035 B.C. when the sidereal point 40.881° coincided with the spring equinoctial point.

The Kali month of Vaisakh also began from this point, which was the middle of Bharni of the Roman scheme of 27 asterisms. The end of the present 7th month of the Jews which is the conjunction of the sun and the moon in the beginning of Visakha asterism of the Roman scheme coincided then with the autumnal equinox. It is stated in Taittriya Brahmana that the great autumnal sacrifice used to be held when a conjunction of the sun and the moon occurred in that nakshatra. The starting point of the calendar of Surya-siddhanta as dealt with by Varah-Mihira was 20.8° which was the beginning of Asvini nakshatra of the Roman scheme referred to above.

The arctic tribes used to measure time by means of lunations and by the moon's movement in the zodiac as well as by the sun's circular movement in the circumpolar region. 123 lunations* and 14 moon's revolutions were then equal to $4\frac{35}{36}$ and $1\frac{17}{360}$ revolutions of the sun respectively. They therefore divided the sun's and the moon's paths into 360 minor (degrees) and 36 major parts. They further divided the sun's

---

*NOTE:—The moon's motion is subject to very slight increase. In 25653 B.C. 19 years were equal to 235 lunations + 0·16 solar day while in 1850 A. D. the period consisted of 235 lunations + 0·18 solar day. 19 lunar months were equal to 553·0082760 solar days in 25653 B. C. while they were equal to 553.0066845 solar days in 1850 A. D. This cycle of 19 lunar months was almost equal to 1½ years plus 13 solar days. It was therefore very convenient to the arctic people because the calendar beginning from the first rise of the sun used to commence from the beginning of the long day after 6 such cycles, from the commencement of the southern course of the sun after 10 such cycles, from the close of the long day after 14 such cycles, from the long night after 20 such cycles and one month after the first sunrise after 30 such cycles. The very insignificant fraction was periodically adjusted by changing the time of reckoning the calendar from morning to noon etc.

path into 18 and 12 signs respectively with a view to facilitate the periodical adjustment of the luni-solar years as 123 and 184½ lunations were respectively equal to the time of the sun's movement in 3580 and 5370 degrees or 879 signs of the first and the second kind. The years consisting of 350, 360, and 377 solar days were used by these people, one solar day being equal to the sun's passage in a degree. The first period was almost equal to the time of the 13 revolutions of the moon, the 2nd to the 12 sun's revolutions and the 3rd to the 14 revolutions of the moon. The ancestors of the Romans divided the first period into 10 months of 35 solar days each and they sub-divided the latter into 5 weeks of 7 solar days each. It is noticeable that 72 weeks were almost equal to 19 lunations. The Vedic people however divided 360 solar days into *ashtakas* (i. e. period of eight solar days each) because 5½ lunar months (160·081 solar days) were almost equal to 20 *ashtakas*. The ancestors of the Greeks divided the first period of 350 solar days into 7 parts of 50 solar days each and they used the scheme of 28 asterisms because the time of the moon's passage in 52 asterisms was equal to 50 solar days. Some tribes used a month of 40 solar days as 246 lunations were equal to the time of the sun's passage in 20 years less 40 degrees. The period of the 3rd year (i. e. 377 solar days) comprised of 29 period of 13 solar days each used by Mexicans. The variation between the 3 kinds of years was of 10 and 17 days and these periods as well as the short periods of 13 solar days are still used as the mourning time by the different sections of the Hindus. While the month of 40 solar days (the sum-total of 3 periods alluded to) is used as the mourning period amongst the Muslims.

In presenting this book to the public, I simply feel I have attempted to fulfil a duty that, in consideration of my convictions, I owed to scholars and students of ancient civilisations. I think, I have herein broken a new ground in research which through the efforts of posterity, may lead to far-reaching conclusions. Notwithstanding the infirmity of my old age, I had to labour incessantly for years in order to explore as much proof as possible of my findings yet, I do not claim to have done my best; because, just when I had gathered up my material and begun its composition, I suddenly lost my eyesight and could not utilise all the materials I had collected. I had very nearly given up the work; but through the kind assistance of my son-in-law, Professor Ram Krishna Shukla M. A. to whom my best thanks are due, I have been able to somehow get through it. At the same time I am also indebted to my son, Pandit Har Swarup Pathak, Deputy Collector who has constantly encouraged and helped me in every possible manner. I am also grateful to Pandit Brahma Narain Sharma, a relation of mine, who gave finishing touches to my work and also helped me in getting the book printed by doing the work of proof-reading etc.

It is quite likely that inaccuracies and contradictions might have crept into the book, as is unavoidable in a case like mine. I shall, therefore, request the scholars to look for the spirit rather than the form of my work.

PILIBHIT,
Dated April 30, 1931.

BHAGWAN DASS PATHAK,
MOH: JHANDA.
DEHRADUN.

CONTENTS.

A PEEP INTO THE DARK PAST

OR

A History of the White Race.

CHAPTER I.

Introduction.

The most sacred books of the Hindus are the four Vedas which are named Rik, Sama, Yajus and Atharva. Opinions differ as to the time when they were composed or compiled but there is not the least doubt that they are the oldest books in the world, a fact not contested even by the Western Sanskrit scholars. They are generally collections of hymns which had been composed at different periods and in various countries.

Some of these prayer-songs date back to the stone age as appears from the fact that wooden vessels made by stone axes are alluded to in the Rigveda (X-101-10). From the historical point of view they are, therefore, very valueable ancient records; but unfortunately the Vedic scholars are not unanimous in their interpretation of these works. This is partly due to the highly figurative language of the Vedas, partly to the changes which the meanings of certain Sanskrit words have undergone in course of time and partly to the transla-

tors' assumption of the theory that these works were composed either in India or in some adjacent country. The family prayer-songs which are the nucleus of the Vedas had been handed down orally from generation to generation and evidently enlarged from time to time till they were put down in writing. During the long ages of transition the language and the religious ideas of the people as well as some terminology of the older songs must have undergone some changes. There have been slight changes even since the time when these works were compiled and arranged in their present form, as appears from a comparison of certain verses of the Rigveda which have been incorporated in the other three Vedas. The only ancient works which give some information about the terminology of the Vedas are Nighantu, Nirukta and the Brahmanas. Nighantu is a very small dictionary of Vedic words and is, therefore, of very little use. Nirukta is a larger work, but it appears therefrom that there were differences of opinion about the interpretation of the Vedas even at the time of the composition of Nirukta.

The author of this work tried to solve the problem by devising the system of interpreting the Vedic words by means of supposed roots. It was, however, not a safe and infallible remedy for the purpose. The system, in fact, enlarged the field of controversy, as it is quite possible for any ingenious Sanskrit scholar to explain a Vedic technical term in different ways by selecting different roots showing phonetical affinity with one another. The Brahmanas' interpretation of the Vedas was based on the so-called Vedic mythology. The figurative language of the Vedas and of

similar works of the other branches of the race to which the Vedic people belonged rendered it possible for the future generation to concoct myths to explain the ancient works which were not correctly interpretable owing to changed local circumstances. According to the late professor Max Muller, the authors of the Brahmanas were blinded by mythology while those of the later Niruktas were deceived by etymological fictions.

Indian translations of the Vedas were generally based on the aforesaid works which, as I have shown above, were not infallible guides. Western oriental scholars who have translated the Vedas did not generally follow blindly the old Sanskrit commentaries, but they also failed to achieve better results as appears from the fact that their rendering of some of the Vedic verses are unintelligible, though they had occassionally to assign quite unusual meanings to certain Sanskrit words in order to remove this defect. The latest English translation of the four Vedas, from which I have quoted in this book, was made by the late professor Griffith after consulting the other translations and Sanskrit commentaries. He has translated correctly the Sanskrit words Udita Suryasye to mean the sus's rising in Rv. VII-76-3, but he translated the same words to mean sun's setting in Rv. V-62-8. Similarly, the word Akta has been given various meanings, viz., night (I-62-8, I-143-3 etc.), beams or rays (I-46-14, I-50-2 and 7 etc.), brightness (VI-5-6), flame (III-17-1) and lustre (X-37-9).

It is clear from the above-mentioned facts that the key which can, unlock the Vedic mysteries has not yet

been found, but the task is not a hopeless one, as the Vedas themselves contain ample material to solve the problem which has apparently escaped the attention of the Vedic scholars. With a view to achieve this purpose it is, however, very necessary to discover first the probable situation of the original home of the people who had composed the Vedic songs which have come down to us either in their original form or as translation into the spoken language of the times when the Vedas were gradually compiled, because we are quite unfamiliar with the circumstances in which the religious and other ideas contained in these works had originated and were subsequently developed. The points of resemblance between the mythologies of the Hindus and other ancient nations, like the Greeks, the Romans, the Egyptians etc., are so great that there is hardly any doubt as to their common origin.

Their linguistic and other differences might be due to the inter-marriages of these people with natives of the countries in which they settled after their immigration from their original home.

The discovery of the original abode of the Vedic people is, therefore, very important from the historical point of view. Some attempts in the direction have already been made, but opinions differ because no convincing evidence on the point in question has yet been found. In fact the controversy on antiquarian questions cannot be settled until some irrefutable evidence is produced. I shall, therefore, try to support my conclusions which are based on the Vedas and some other Hindu theological works by means of astronomical and some foreign evidences.

I may state for my readers' information that I shall give quotations in this book from professor Griffith's translation of the Rigveda. except in some rare cases where the name of the Veda concerned will be invariably noted.

CHAPTER II.

Arctic Home of the Vedic People.

In the Vedas there are great many verses in which gods are prayed for life of 100 sarads (autumns) or of 100 himas (winters).*

The autumnal season which follows the rains is of course a very unhealthy period in India and there is therefore nothing strange if the ancient people prayed for a life of 100 autumns. The winter season is, however, the most healthy one in India and it is, therefore, not unreasonable to suppose that those verses at least, in which a life of 100 winters is prayed for, must have been composed in some very cold country where the human life was considered very precarious in that season. This idea is supported by the scriptures of the parsis whose ancient language, called zend, contained about 70 p. c. Sanskrit words and who, therefore, apparently sprung from the same source as the Vedic people. According to these scriptures the years were counted by the number of winters and there were ten winter months in a year. It is also stated therein that winter used to occur in its most severe form in the original home of the race. This statement is also supported by the following religious practices for the disposal of the dead bodies, as mentioned in these sacred books of the Parsis. If a man died when it was raining, snowing or blowing or dark-

ness was coming on, the ancients led the dead body to lie in one of the temporary burial houses which had been prepared for the purpose in every house or group of houses for two nights, three nights or a month long, until birds began to fly, plants to grow and the wind to dry up waters from off the earth. Then the dead body was removed to the burial place for final disposal.

It appears from the circumstances stated above that the original abode of the race to which the Vedic people belonged was not in India but in some very cold country. According to Parsi scriptures, the ancient. Aryans settled after their immigration from the original home in sixteen countries, of which Hapt Hindu (Sanskrit Sapta Sindhu) or the land of seven rivers was the fifteenth. (In this we may probably look for the origin of the present Hindu). Their immigration is also alluded to in Rv VI-47-20.

The late professor Max Muller was of opinion that the race lived in Central Asia and immigrated therefrom to India and Europe, while the late Pandit Bal Gangadhar Tilak was led by certain reasons, which were, I think, not quite sufficient to carry conviction, to form the idea that the Vedic people s original abode had been in some part of the Arctic region from which they immigrated at about the time when the vernal equinoctial point was in Ardra asterism (Orion.)

I proceed now to discuss as to which of the above conclusions is supported by the Vedas and by the ancient traditions of the various branches of this race. The following verses of the Rigveda show that the

people who composed them were very much afraid of darkness and that the daylight was so much appreciated by these people that they used such words as life and breath in their praises of Dawns—

"Conceal (Marut dieties are addressed) the horrid darkness, drive far from us each devouring fiend. Create the light we long." I-86-10.

"At birth of these two gods (Soma and Pushan) all gods are joyful: they have caused darkness, which we hate, to vanish." II-40-2.

"She (dawn) hath uncovered fiends and hateful darkness" VII-75-1.

"Usha (dawn) approaches in her splendour driving all evil darkness far away, the goddess." VII-78-2.

"Arise the breath, the life, again hath reached us: darkness hath passed away, and light approacheth." I-113-16.

As the appearance of dawns was life and breath to these Vedic people so darkness was death to them, vide the following verses of the Atharvaveda—

"Let rising Sun drive off the snares of mrityu (death)." XVII-1-30.

"The Asvins, leeches of the Gods, O Agni, have chased Death far from us with mighty powers." VII-53-1.

Now the question arises as to whether the fear of darkness was due to the probable attack by wild beasts at night or to the abnormal length of it, as is the case with the long winter night in the arctic region. The following verses show that the latter was the cause and in fact, in one of them (II-27-14) the word dirgha (long) is specially used as qualifying the word tama or darkness.—

"Vouchsafe to us, O Asvin Pair, such strength as, with attendant light (moonlight),

"May, through the darkness, carry us" I-46-6.

"We have passed over the limit of this darkness: Our praise hath been bestowed on you, O Asvins." I-183-6.

"May I obtain the broad light free from peril, O Indra, let not during darkness seize us." II-27-14.

The above conclusion is supported by the under-mentioned Vedic verses which show that priests were employed for the purpose of offering prayers to certain deities who were supposed to give sunlight and that the period during which this work was performed by the priests was so long that they used to be tired by constant services or prayers. It was apparently due to this fact that the two winter months were called tapa tapasva, as they were devoted to this work—

"Bards of approaching Dawn who know the Heaven are come with hymns to throw the mountain open.

"The Sun hath risen and oped the stable portals: The doors of man, too, hath the God thrown open." V-45-1.

"Surya (sun) hath spread his light as splendour: hither came the Cow's Mother, conscious, from the stable......" V-45-2.

"This laud hath won the burden of the mountain ..

"The mountain parted, heaven performed his office. The worshippers were worn with constant serving." V-45-3.

"Here did our human fathers take their places, fain to fulfil the sacred law of worship."

"Forth drove they with loud call Dawns teeming Milch-kine hid in the mountain stable in the cavern." IV-1-13.

"Turned to this All, far-spreading, she hath risen Mother of kine, Guide of the days she bringeth." VII-77-2.

It is evident from the above quoted verses that it was believed by these Vedic people that the dawns used to be hidden in the cavern of the celestial mountains during the long winter night, and, in fact, the sun is still supposed by the Hindus to rise and set from the mountains which are called *Udayachala* and *Astachala* respectively.

It is also noticeable that the ancient Egyptians' name of the seventh sign Libra meant the sun's mountain. These verses also show that the first dawn was called the mother cow and her offsprings were the dawns which followed their supposed mother It is clearly stated in one of these verses (VII-77-2) that the mother cow or the first dawn was the guide of the days.

The figurative use of such words as cow or kine is also to be found in the mythologies of the ancient Greeks and the Romans. Helios the sun god had 350 cattle and Hercules killed Cacus and recovered stolen cattle. Hera, the wife of Zeus, and the goddess of the open heaven was closely connected with cows.

The stolen dawns are alluded to in the vedic verse VI-60-2. The fact that the kine alluded to in the vedas were heavenly objects is made more clear by the verse 11-24-14 in which it is stated that Brahmanaspati drove forth kine and distributed them to heaven. The kine were evidently the three bright cows wihch Brihaspati (another name for Brahmanaspati) discovered and made apparent while seeking light in darkness (X-67-4). These were the three mother cows or the first dawns which used to precede the long summer day and the two groups of the ordinary days and nights which followed the end of the long winter night and that of the long summer day in the arctic region.

These arctic phenomena of the first dawn and of the temporary cessation of the occurrence of ordinary days and nights are alluded to in the following verses of the Rigveda—

"She (dawn) who hath knowledge of the first day's nature is born refulgent white from out the darkness .." 1-123-9.

"There in the east half of the watery region (rajaso) the mother of the cows hath shown her ensign." 1-124-5.

"At the first shining of the earliest mornings, in the cow's home was born the Great Eternal sun..." III-55-1

"May this first Dawn bring us the host of gracious Gods (sudevyah)...... X 35-4."

"Free from all sickness may the mornings come to us ..". X-35-6.

" So, like the past, with days of happy fortune, may the new Dawns shine forth on us with riches." 1-124-9.

The noble One (Agni) was born at days' beginning .." V-1-5.

Even he whose hundred wander in his own abode, driving the days afar and bringing them again " V 48-3.

"...Dawn gives her splendour at the days' beginning." V-80-2.

"When fair bright days shall dawn on us, O Indra, and thou shalt bring thy banner near in battle,

"Agni the asura shall sit as herald, calling Gods hither for our great good fortune." VII-30-3.

"The spotless Dawns with fair bright days have broken; they found the spacious light when they were shining.

"Eagerly they disclosed the stall of cattle: floods streamed for them as in the days aforetime." VII-90-4

"That Day and Night, in every hall of sacrifice, may wait on us and bless us when they first spring forth." X-76-1.

There are certain points in the above quoted verses which need some explanation. It is stated in Rv 1-124-5 that in the eastern half of the watery region (rajaso) the mother of the cows or the first dawn hath shown her ensign. It is clear, therefore, that the Vedic poets compared heaven with a celestial ocean on which the heavenly bodies appeared to make voyage. This explains the enigmatical sentence in X-190 wherein it is stated that the year was produced out of smooth waters (samudra) and bellowy ocean (arnava). It means that the year consisted of the sun's movement on these celestial waters.

The above quoted verse X-35-4 shows that the first dawn was supposed to bring the host of gracious gods. It appears, therefore, that the Devas were either the light-producing objects or spiritual powers who were supposed to bring or create light.

The word Deva and its antithesis Adeva have wrongly been translated to mean gods and godless men, instead of powers of light and darkness respectively.

According to the above quoted verse VII-30-3, Indra, the lord of Devas, was suppposed to bring his banner near in battle at the break of fair light days. There are, in fact, numerous such verses in the Vedas, refering to the war between the Devas and the Adevas who were called by various names. The following verses clearly show that the object of this supposed war was to bring light to the arctic people—

"Come, Maghavan, Friend of Man, to aid the singer imlporing thee in battle for the sunlight .." IV-16-9.

"Yea, Indra, all the Deities installed thee their one strong champion in the van for battle.

"What time the godless (adeva) was the gods' assailant, Indra they chose to win the light of heaven." VI-17-8.

"Though didst impel the sage to win the day light..." VI-26-3.

"So battle now, O Indra and thou, Agni, for cows and waters, sunlight, stolen Mornings......" VI-60-2.

According to Taittiriya Samhita, the priests of the olden times used to be afraid as to whether dawns would or would not terminate into sunrise. This statement is supported by the undermentioned verses of the Rigveda in which the temporary or the immature dawns of the arctic region are alluded to:—

"Savitar God of all men hath sent upward his light.........Dawn hath made all the universe apparent." VII—76-1.

"I see the paths which Gods are wont to travel...... Eastward the flag of Dawn hath been uplifted . ..." VII-76-2.

"Great is, in truth, the number of Mornings which were aforetime at the Sun's uprising,

"Since thou, O Dawn, hast been beheld repairing as to thy love, as one no more to leave him." VII-76-3.

"Leader of kine and Queen of all that strengthens, shine, come as first to us, O high-born Morning." VII-76-6.

"Bringing all life-sustaining blessings with her, showing herself she sends forth brilliant lustre.

"Last of the countless mornings that have vanished, first of bright morns to come hath Dawn arisen" I-113-15.

"Strong to exalt the early invocation are Night and Dawn who show with varied aspect.

"The Barren clothes her in wide woven raiment, and fair Morn shines with Surya's golden splendour." I-122-2.

"Blessed art thou, O Dawn, Shine yet more widely. No other Dawns have reached what thou attainest" I-123-11.

"......The last of endless morn that have departed, the first of those that come, Dawn brightly shineth" I-124-2.

The so-called barren dawns (I-122-2) which did not use to bring forth the sun, were responsible for the arctic phenomenon of the successive appearance of dawn and night without the intervening daylight. This phenomenon is often referred to in the Vedas under the name of Naktoshasa, vide, the following quotations:-

"I call the lovely Night and Dawn to seat them on the holy grass at this our solemn sacrifice." I-13-7.

"Whom many dawns and nights, unlike, make strong. He hath been won, Herald who sits in light..." 1-70-4.

"Night and Dawn changing each the other's colour, meeting together suckle one same Infant:

"Golden between the heaven and earth he shineth. The Gods possessed the wealth-bestowing Agni." 1-96-5.

"Common, unending is the Sister's pathway: taught by the Gods, alternately they travel.

"......Night and Dawn clash not, neither do they tarry." 1-113-3

"May Night and Morning, hymned with lauds, united, fair to look upon,

"Strong Mothers of the sacrifice, seat them together on the grass." 1-142-7.

"Or, seen alternate, those two blessed Goddesses, Morning and Night, who stir all living things to act..." II-31-5.

"Night and Dawn, lauded, hither come together..." III-4-6.

"... Morning and Night, the two, as 'twere all-kno wing: these bring the sacrifice unto the mortal." V-41-7.

"Here in this shrine may Dawn and Night, the daughters of Heaven, the skilful Goddesses, be seated.

"......may the Gods seat them with a willing spirit" X-70-6.

"Pouring sweet dews let holy Night and Morning, each close to each, be seated at their station..." X-110-6

"...Here on our grass let Night and Dawn be seated: bring longing Varuna and Mitra hither. VII-42-5.

"And may the unobstructed Night and Morning both, day and night provide for our protection" IV-55-3.

The above quoted verses show that night and morning were of different colour, that they appeared alternately in close succession and that they were quite distinct from the usual phenomenon of day and night.

Some of these verses have become unintelligible owing to the figurative use of words which have been translated to mean 'grass' and 'sacrifice.' How can night and morning sit on 'grass' and how can they bring forth 'sacrifice.'? These words are used in the sense of horizon and the bright world of arctic region (as opposed to the dark world of the long winter night respectively.

In primitive times the seat offered to visitors by way of etiquette was naturally of grass owing to the extreme simplicity of life. The arctic people believed that Devas or the gods of light used to visit periodically their region to perform sacrifice in the heaven and these primitive priests offered them seats in the horizon. Even at the present time, imaginary devas are offered seats on *durba* grass in religious ceremonies. The following Vedic verses, moreover, clearly show the figurative use of the words in question—

"...All the Gods came to thy this heavenly yajus..." X-12-3.

"At the Trikadrukas the Gods span sacrifice......" VIII-81-21.

"...May they, the Mighty, giving ear, establish this sacrifice, to make us free and sinless" VII-51-1.

"To seat a thousand Heroes (devas) they eastward have strewn the grass with might.

"Whereon, Adityas, ye shine forth." I-188-4.

Another arctic phenomenon called *aktoshasa*, which caused the appearance of dawn just after sunset without the intervening night, is referred to mean *nakta* or night, though *akta* and *nakta* are antitheses of each other. The word *akta* has been variously interpreted by the translator in different verses. viz., night, shine, flame, day, splendour etc., but it actually means the shine of the sun in the long summer day, as I shall show later on.

The arctic phenomenon of the first appearance of ordinary days and nights after the close of the long winter night is often alluded to in the Rigveda. The following verses are very clear on the point in question.

"Even he whose hundred wander in his own abode, driving the days afar and bringing them again." V-43-3.

"...That Day and Night, in every hall of sacrifice, may wait on us and bless us when they first spring forth." X-76-1.

The general readers will perhaps be unable to understand the natural phenomena of the arctic region which have been referred to above. It is, therefore, necessary, I think, to describe the natural divisions of the heavens in that region before discussing the other arctic phenomena which are also alluded to in the Vedas.

With the exception of the place where the pole star is on the zenith, the sky of the arctic zone is divided

naturally into two parts, as is also the case elsewhere save in the places which are situated on the equator. The stars in the northern part of the sky, which is called the circumpolar region, never appear to rise or set, but they revolve round the pole star; while, in the southern part, they seem to ascend the horizon in the east and to disappear therefrom after sometime in the west.

The zodiac, or the apparent path of the sun, the moon and the planets, lies partly in these two portions of the arctic heaven and partly below the horizon, which is, however, not the case in the non-arctic regions as the hidden and the ever visible portions of the heavens increase or decrease in porportion to distance of the countries concerned from the earth's equator.

The stars of the hidden zodiac are never visible to the people of the arctic region. The sun also, while passing through this part of the zodiac, remains invisible and causes the long winter night. When the sun is at a short distance beyond the arctic horizon, it causes a strange phenomenon which is peculiar to that zone. There is a successive appearance of dawn and darkness without the sun's uprising, till the sun reaches the horizon by its upward movements. This phenomenon was called *naktoshasa* by the Vedic people, as I have already shown. These are often figuratively called in the Vedas young plants (oshadhi) which had not reached maturity. When the sun reaches the horizon, or the point where the southern portion of the arctic heaven begins, it causes the successive appearance of day and night aggregating 24 hours for so long a period as the sun takes to approach the northern or the circu-

mpolar part of the arctic heavens. During its passage in the northern part of the zodiac, which lies in the circumpolar region of the arctic heaven, the sun causes the long summer day by never rising or setting, but performing a kind of spiral movement. It appears to revolve round the pole. but each revolution carries it also upward, until it attains the north solstitial point at about June 22. Thereafter each revolution carries it downward until it reaches the southern part of the circumpolar heaven.

Then the sun again begins to rise and to cause the reappearance of the ordinary days and nights for so long a period as before the commencement of the long summer day. Thereafter, the sun goes below the horizon and the long winter night commences; though for a few days, brightness, for a short while, without sunlight, occurs, which is called *doshanakta* in the Vedas. After the close and before the commencement of the long summer day, the sun sets for a very short time and causes the phenomenon of *aktoshasa* already referred to.

According to the sun's motion. the visible zodiac of the arctic home was thus divided into three parts, viz., the circumpolar region and the two parts of the non-circumpolar region situated on both sides of the former. These are the three heavens which are referred to in the undermentioned verse of the Rigveda—

"Three heavens there are; two Savitar's, adjacent: in Yama's world is one, the home of heroes.

"As on a linch-pin, firm, rest things immortal..." I-35-6.

The above verse shows that the circumpolar part of the zodiac was supposed to belong to Yama and to have been the house of heroes and immortal beings.

As the heavenly bodies, while moving in that heaven, never used to set, they were supposed to fight incessantly with the powers of darkness and were considered immortal heroes, because they did not use to disappear daily like the celestial bodies of the ordinary days. This explains the strange statement in the verse I-83-5 about the deathless birth of Yama, the lord of the circumpolar region, e.g:-

"Atharvan first by sacrifices laid the paths; then, guardian of the Law, sprang up the loving Sun.

"...Let us with offerings honour Yama's deathless birth" I-83-5.

This celestial region was the paradise of the Vedic people as appears from the following verses—

"O Pavamana, place me in that deathless, undeca ying world

"Wherein the light of heaven is set, and ever-lasting lustre shines" IX-113-7.

"Make me immortal in that realm where dwells the King, Vivasvan's Son (Yama),

"where is the secret shrine of heaven, where are those waters young and fresh ....." IX-113-8.

"Make me immortal in that realm where they move even as they list,

"In the third sphere of inmost heaven where lucid worlds are full of light..." IX-113-9.

Yama's dwelling was the home of gods (X-135.7). Yama was supposed to rule pitris or Fathers (Av XVIII-2-46) and his messenger was mrityu or Death, who despatched men's spirit to the Fathers (Av XV III-2-27). Yama was the first mortal to die and he chose death for the sake of gods (X-13-4). His deathless birth above referred to was, therefore, his rebirth in the supposed paradise. There is a dialogue between yama and yami (his sister) in hymn X-10 of the Rigveda The latter tried to persuade yama to be come her husband but he refused and deserted her. Yama was apparently the sun and yami the dawn who had to separate from each other at the commencement of the long summer day. The sun of the ordinary days was supposed as a mortal being and was, therefore, named *martanda.* According to the verse X-72-9 *martanda* was born in the previous yuga of devas (long summer day) and was thrown far away by his mother to die and to be born again.

The ordinary days and nights were supposed to have been mortals as appears from the verse X-12-14, wherein it is stated that, while days and night go to the world of spirits, "let pitra or Fathers (of the long day)

refresh us." The above fact explains certain unintelligible verses of the Vedas. For instance, it is stated that men (nri) conduct Soma (moon), the heaven (IX-27-3) and that Soma led by men makes the sun mount to heaven (circumpolar region) (IX-86-22). This was the reason that Rudra, the lord of the long summer day, was called *nrighna* or the killer of *nri*. This long day was called *nrimedha* or the sacrifice of nri (ordinary days and nights). The horrible custom of man-sacrifice among some tribes of the arctic race originated from a misconception of such verses.

The sun was called *nrichakshu* and *visvachakshu* or the eye of *nri*, the ordinary mortal days, and of *visva*, the universal or the long day. It is stated in the verse X-63-4 that the *nrichakshu* devas (the sun and its controlling gods of the ordinary days) attain immortality (in the long day) by not sleeping (as there was no night) and become *jyotiratha* (borne on car of light) and sinless (deprived of darkness) with *ahimaya* (serpent's power of changing colour of the skin) and that they robe themselves (with white skin) in the height of heaven (circumpolar region). This was the origin of the Hindu belief that men by austerity attain paradise, where they sojourn for the period allowed to them according to their good deeds and are thereafter reborn on earth.

The ordinary days and nights of the northern course of the sun used to terminate into the long summer day in the arctic region, while those of the southern course ended with the commencement of the long arctic night. This fact led the arctic people to

believe that the human beings dying in the former period (of the uttarayana sun) go to paradise, while those dying in the latter period (dakshinayana sun) go to hell. In fact the latter period is still considered inauspicious by the Hindus and no good rite or ceremony is performed therein.

The following verses in praise of the sun and the moon give some indication about the natural parts of the arctic zodiac and about the movements therein of these celestial bodies—

"Beaming forth splendour with thy light, thou hast attained heaven's lustrous realm (the circumpolar region) ......" X-170-4.

"...The radiant God, the spring of the joy to every eye, as thou (sun) art mounting up o' er the high shining flood." X-37-8

"Surya (sun) hath mounted to the shining ocean (circumpolar region) when he hath yoked his fair backed Tawny Horses (of the long day).

"The wise (gods) have drawn him like a ship through water...." V-45-10.

The Hindu legend about the fish incarnation of Vishnu (*matsyavatar*) was evidently based on the last quoted verse. It is also to be noted that Phoebos, the sun-god of the ancient Greeks, was alleged to have traversed the sea in the form of a fish and disembarked like a star in the shape of a dolphin.

The circling motion of the sun in the circumpolar region is alluded to in the undermentioned verse—

"Auspicious are the sun's Bay-coloured Horses, bright, changing hues ..... sky's ridge (literally, the back of the heaven) here they mounted, and in a moment speed round earth and heaven." I-115-3.

The sun was supposed to have been ever young (*ajara*, or the one never affected by old age), while moving in the circumpolar part of the arctic zodiac, as he never used to set, vide, the following verse—

"O Indra-Agni lofty rule like the unwasting Sun in heaven." V-27-6.

While moving in that region, no power of darkness could cause the sun to sink down the horizon. "No godless man (the word *adeva* wrongly translated from time remotest draws thee (sun) down when thou art driving forth with winged, dappled steeds." X-37-3.

The absence of the phenomenon of sun's rising and setting in the circumpolar region is further proved by the fact that, according to verse X-156-4, the sun was made by Agni, an eternal star or the star of the circumpolar part of the heaven, which never appeared to rise or set. Moreover, some of the Vedic poets have expressed this idea by comparing the sun of the long summer day with a red bird who had no nest to dwell in, because it did not use to disappear from heaven, vide, the following verse—

"Strong is the Red Bird in his strength, great Hero, who from of old hath had no nest to dwell in." X-55-6.

This red bird was named *garutman*, or *garura*, and it subsisted on serpents which were the symbol of darkness. This is the reason that in the verse VII-66-4 the sun of the long day is said to have arisen *anaga* or without serpent (without the night of the ordinary day). The word *anaga* which is an antithesis of *naga*, or serpent, has wrongly been translated to mean 'sinless.' It is stated in the Ramayana that Meghanada, while fighting with Rama and Lakshamana, enveloped them with nagas and that Garura was sent for to release them from the bondage.

There is a verse in the Rigveda in which the long summer day and the long moonlit nights are alluded to. These were caused by the sun's and the moon's spiral movements in the circumpolar part of the zodiac; which was regarded to be the gathering place or the synod of gods, where they enjoyed themselves after killing Vritra or the power of darkness. It is stated in verse X-12-7, quoted below, that the sun and the moon maintained there their brightness unweariedly or without needing rest (below the horizon).

The week-days were evidently designed by that branch of the arctic race which divided the zodiac into seven parts and twenty-eight constellations. They started their scheme of nakshatras, signs etc from the commencement of the circumpolar region, because it consisted of almost eight constellations of that scheme.

This branch was, therefore, called Sapta-sindhu or Hapta-hindu by the ancient Iranians owing to their division of the zodiac into seven celestial oceans. The division of the sun's path into fourteen parts, called manus, was perhaps also used by this branch, each manu being equal to two nakshatras of the aforesaid scheme.

When these people settled in the north west of India, they called the seven rivers of that country after the supposed celestial rivers or oceans of the circumpolar region.—

"They, in the synod where the Gods rejoice them, where they are seated in Vivasvan's dwelling,

"Have given the Moon his beams (Dyotani or the moon-lit night), the Sun his splendour: the Two unweariedly maintain their brightness." X-12-7.

The length of the sun's ordinary path in the sky is enlarged to a great extent (from a semi-circle to a complete circle) during its spiral movement in the circumpolar part of the zodiac. This fact was referred to by the Vedic poets in their usual style of figurative language in the undermentioned verses—

"For the Broad Sun was seen a path more widely laid, the path of holy law hath been maintained with rays......" I-136-2.

"Yoked to his chariot-pole there stood the Coursers: they only travel round earth's farthest limits......" X-114-10.

The circling movement of the sun in the circum-polar region is also alluded to in the Rigveda. It is stated in verse X-102-1 that the car of Indra (the sun's controller) worked on either side, i.e. the sun used to pass through both ways, viz., from east to west as well as from west to east. Similar idea is also expressed in verse VII-60-2 in which it is stated that the sun ascends by both the pathways. The Sanskrit word used in the text is *udita*, which literally means the first rising of the sun. I have already quoted the Vedic verse refering to the circling movements of the sun's horses.

The undermentioned verse of the Rigveda shows that the arctic people whose health was effected by the severe cold and darkness of the long winter night used to look forward to the advent of the long summer day for their recovery. This was the reason that the gods who were supposed to control that phenomenon were given the appellation of 'the healers of diseases':—

"Rising this day, O rich in friends, ascending to the loftier heaven (literally, the northern heaven),

"Surya, remove my heart's disease, take from me this my yellow hue." I-50-11.

There are, however, some Vedic verses which show that this long summer day, which was considered the most healthy period of the year at its beginning, used to become oppressive to the Vedic people, owing to the excessive heat caused by the absence of nights—

"May the Gods kindly give us nights and mornings .." VI-52-15.

The verse VI-52-15, partly quoted above, is one of the most clear proofs of the arctic home of the Vedic people, as during the period of the long summer day, the phenomena of the daily rise of dawns and of the appearance of nights with moon and stars are suspended in the arctic region.

The statement in the Hindu Puranas that the moon was born in Krittika and the sun in Vishakha nakshatras also support the fact alluded to in the verse quoted above. The nakshatras (asterisms) lay at a distance of half the sphere from one another, and, they were once so situated that Krittika was the first nakshatra in which the moon used to appear after the long summer day, while Visakha was the asterism in which the sun's first appearance after the long night used to take place.

This fact was the origin of the Greeks' traditions about their gods. According to their mythology, there were three generations of the supreme God, viz, Ouranos, Kronos and Zeus. Ouranos used to hide his children in some secret part of his wife, named Gaea (*go of the Vedas*) and was subsequently mutilated by his son and successor, Kronos. Kronos was in the habit of devouring his children and was, therefore, dethroned by his son, Zeus, who was the last God of the ancient Greeks.

These children were, of course, the sun, the moon, the dawn etc , which used to appear on and disappear

from the ancients' arctic horizon for long intervals during the long winter night and the long summer day, as the case might have been.

The Vedic Indra had also forced the engulfer *Dyaus* or the heaven to disgorge and had slain the *Danus.*

The temporary disappearance of the moon is also evident from the following Vedic verses—

"Borne by his Coursers Seven may Surya visit the field that spreadeth wide for his long journey (as contrasted with his daily journey).

"Down on the Soma (moon) swooped the rapid Falcon (sun). Bright was the young Sage moving mid his cattle." V-45 9.

"Flow onward, Soma (moon), in thine own celestial forms, flow, Indu (moon), poured within the beaker and the sieve.

"Sinking into the throat of Indra...led by the men (nri) thou madest Surya mount to heaven." IX-86-2.

The last-quoted verse is rather unintelligible. The word soma, as already stated, was a name of the moon as well as of an unknown plant, the juice of which was used by the arctic people as an intoxicating and invigorating liquid. But the word 'Soma' actually conveys the meaning 'moon', as appears from the word Indu, which means 'moon', and from the word 'celestial'. The word *nri*, which literally means 'mortal man,'

is figuratively used in the sense of ordinary days and nights. The verse, therefore, means that the moon, after passing through ordinary days and nights, enters the throat (circumpolar region) of Indra and causes the sun to mount to that part of the heaven.

Soma, the moon, was supposed to mount to circumpolar region with the sun (IX-27-5) and to give the latter splendour (IX-28-5).

The great brilliancy of the sun in the long summer day and the great heat caused thereby were, therefore, attributed to disappearance of the moon. As the moon was supposed to invigorate the sun, it was compared by the Vedic people with their invigorating plant.

The circumpolar part of the zodiac was the *vajra* (wrongly translated to mean thunderbolt'), car and quoit of Indra with which he destroyed *Vritra*, the power of darkness, as appears from the following verses—

"When, with the Princes, Maghavan (Indra),... comes nigh the thunderbolt of gold, and the Controller's car ..... then Indra is the Sovran Lord of power whose glory spreads afar." X-23-3.

"...The splendid bolt of thunder was deposited, as the great Sun was set in heaven" VIII-59-2.

"Deep in the ocean (samudra) lies the bolt with waters compassed round about ....." VIII-89-9.

"May the sweet Soma juices make him (Indra) happy to cast his quoit that lies in depth of waters..." X-73-9.

The sun's rising after the long winter night was supposed to have been his first birth, while his rising after the close of the long summer day was considered as the second. The sun was, therefore, called *dvija*, or the twice-born, vide the following verse...

"Visit, to prove us free from sin, O Surya, Lord of Great Mighty, the bright God sprung from Daksha,

"Twice-born and *true*, *observing sacred duties*, Holy and full of light, whose tongue is Agni." VI-50-2.

The portions italicised in this verse require some explanation. The words *anaga* and *satya*, which have been translated to mean 'sinless' and 'truth' respectively, also occur in the following verse...

"When thou, O sun, this day, arising sinless, shalt speak the truth to Varuna and Mitra......" VII-60-1.

Now the question arises as to how the sun can rise 'sinless.' As already stated, the word *anaga* is the antithesis of *naga* which means 'serpent'. The latter was the symbol of darkness among the ancients. The sun rising at the beginning of the long summer day is evidently meant here, because the phenomenon of night ceases to exist in the arctic region during the long summer day. As regards the word *satya*, which has been translated to mean 'truth', I quote below a verse of the Rigveda which explains its meaning. ..

"...The flowing of the floods is Law, Truth is the Sun's extended light........" I-105-12.

The long winter night of the arctic home of the Vedic people was called *tama* or darkness and *anrita* or falsehood in the Vedas, while the sun's passage during the ordinary days of 24 hours each was termed *rita* or *raja*, i.e. light mixed with darkness or falsehood during that period. This was the basis of the three well-known qualities called *tamoguna*, *rajoguna* and *satvaguna*, or evil, goodness mixed with evil and pure goodness repectively.

As regards the observance of the sacred duties by the sun, it may be noted that, according to the belief of Vedic people, the heavenly bodies were suposed to come to the arctic heaven to perform sacrifices while moving in the circumpolar part thereof. The sacred thread worn by the Brahmanas of India is a symbol of the sacrifice performed by the gods. Brahmanas become *drija* or the twiceborns like the sun when they perform the required sacrifice and wear the sacred thread. According to a verse recited at this ceremony, the sacrifice and its emblem, the sacred thread, were born in the ancient times along with Prajapati or the sun of the long summer day. I quote below some Vedic verses refering to this heavenly sacrifice :—

"By holy Law they kept supporting order by help of sacrifice in loftiest heaven." V-15-2.

"May they (Adityas) the Mighty, giving car, establish this sacrifice to make us free & sinless (anaga)." VII-51-1.

"...At the Trikadrukas the Gods span sacrifice." VIII-81-21,

" ..All the Gods came to this thy heavenly Yajus (sacrifice)." —X-12-3.

"By their (Mitra-Varuna) own power these Twain in close succession move;

"They go as playing children round the sacrifice.

"One of the Pair beholdeth all existing things; the other ordereth seasons and is born again." X-85-18.

"Yea, Surya, thou art great in fame......Thou by thy greatness art the God's High Priest, divine, far-spread unconquerable light." —VIII-90-12.

It appears from the undermentioned verses of the Rigveda that the celestial bodies moving in the circumpolar part of the arctic heaven were supposed to be immortals who, owing to their non-disappearance, did not sleep or rest, while those appearing in ordinary days and nights were considered mortal.—

"Looking on men, ne'er slumbering, they by their deserts attained as Gods to lofty immortality.

"Borne on refulgent cars, sinless, with serpents' powers they robe them, for our welfare, in the height of heaven." X-63-4.

"Great Kings who bless us, who have come to sacrifice, who, ne'er assailed, have set their mansion in the sky,—

"These I invite with adoration and with hymns, mighty Adityas, Aditi, for happiness." X-63-5.

"...Thou (Agni) in the Adityas' keeping movest restlessly......" —X-35-9.

The following Rigvedic verses show that the usual phenomenon of the successive appearance of the sun and the moon on the horizon was also not usual in the region where the ancient Vedic people lived.

"He (Brihaspati) found the light of heaven, and fire (agni), and Morning: with lucid rays he forced apart the darkness (tama)..." X-68-9.

"As trees for foliage robbed by winter, Vala mourned for the cows Brihaspati had taken.

"He did a deed ne'er done, ne'er to be equalled, whereby the Sun and Moon ascend alternate." X-68-10.

It is clear from the above verses that the Vedic people lived in some part of the arctic region. In this connection, I may mention that the arctic region was not so uncongenial to human habitation in the pre-glacier period, as is the case at present. From the authority of Encyclopaedia Brittanica, ninth edition, we learn that abundant remains of vegetation, indicative

of warm climate and including a bed of coal, twenty-five to thirty feet thick, have been found as far north as latitude 81 ¾ degrees. The change in the climate took place within a comparatively recent geological period.

There are a few hymns in the Rigveda which are generally supposed to refer to the world's creation and which give rise to the religious belief in the periodical extinction and re-creation of the world. This was, however, not the idea of the composers of these hymns. They simply refer to the extra-ordinary changes that used to take place in the conditions of the arctic home of the Vedic people. The extinction of all signs of active life among human and animal beings during the long arctic night and its harmful effect on the vegetation of the land and their reappearance after the end of that awful night are described in these hymns in the usual higly figurative style of the Vedic language.

"The world was swallowed and concealed in darkness: Agni (God of light) was born and light became apparent......" X-88-2.

"Darkness there was: at first concealed in darkness (the blinding darkness which occurs at about the middle of the long arctic night is evidently meant) this All was indiscriminated chaos......" X-129-3.

"Death (the supposed death of the sun at evening) was not there nor was there aught immortal: no sign was there, the day's and night divider (dawns) ...." X-129-2

"What time the gods...set him as Surya, son of Aditi, in heaven,

"When the Pair (ordinary night and day), ever wandering, sprang to being..." X-88-11.

"For all the world of life the Gods made Agni Vaisvanara to be the day's bright Banner,—

"Him who hath spread abroad the radiant Mornings, and, coming with his light, unveils the darkness." X-188-112.

"The wise and holy Deities engendered Agni Vaisvanara whom age ne'er touches (Agni of long summer day),

"The ancient star that wanders for ever (i.e. never sets), lofty and strong......" X-88-13.

"Well knoweth Savitar...where ocean (celestial) firmly fixt, o'erflwed its limit.

"Thence sprang the world, from that uprose the region: thence heaven spread out and the wide earth expanded." X-149-2.

"Then, with a full crowd of Immortal Beings (of the long summer day), this other realm came later, high and holy......" X-149-3,

"...let Savitar (sun's controller) come downward to us, heaven's bearer, Lord of every blessing." X-149-4.

"From Fervour (tapa) kindled to its height Eternal Law (ritam) and Truth (satyam) were born:

"Thence was the Night produced, and thence the billowy flood of sea arose." X-190-1.

"From that same billowy flood of sea the Year (samvatsara) was afterwards produced,

"Ordainer of the days and nights, Lord over all who close the eye". —X-190-2.

The deity called Agni, who is referred to in some of the above quoted verses, is one of the important Vedic Devas.

The word *agni* ordinarily means 'fire', but the deity of that name was a light-and-heat-producing celestial deva or deity whose conception was possible only in the arctic region. The sign of light at the close of the long winter night was supposed to be the birth of the infant Agni who was believed, as already stated, to receive nourishment from the arctic phenomenon called *naktoshasa* or the alternate appearance of night and dawns before the sun's uprising. These were figuratively called also the young plants in which Agni used to enter (Rv. VII-9-3). Thereafter, he was supposed to have been made strong by many dawns and nights (I-70-4).

Agni was supposed to have been full of youth during the long summer day. He was the supposed messenger of Vaisvanara, the supreme lord of light

(I-59-2). According to the verses VII-8-1, VII-9-3 and X-1-1 of the Rigveda, he used to come to birth and shine before dawns and he was the herald of dawns (I-94-5 and VI-4-2).

In Rv II-2-3 he is referred to as the herald of earth (Prithivi) and heaven (Diva) also. These two words were evidently used in a special sense in the Vedas. Prithivi was the name of the eastern horizon of the bright world as opposed to the dark one of the long arctic night, which was called *asurya* or the sunless world vide Yajurveda 40-3.

This celestial Prithvi was supposed to give birth to the sun and dawn of the ordinary day and night after the long winter night and the long summer day. There were, in fact, three *lokas* or worlds according to Hindu scriptures. Two of these were represented by the long arctic night and the long summer day, while the third was the one in which the ordinary days of 24 hours each used to occur.

The dark world was called *tama* (darkness) and *anrita* (absence of rita or brightness) and *tapa* (or penances) used to be performed for light The two winter months of the tropical year are still called, *tapa* or *tapasya*.

According to Rv III-1-12, Agni was the child of *apa*. The latter was regarded as the bright stream of the bright celestial world.

Agni as the Gods' messenger was the sender of

dawns (Rv IV-1-1) and his lustre used to turn into dawns (Rv V-28-1).

According to Rv X-91-1 and Rv X-88-12, Agni was the ensign of days, spreaded dawns and used to rise at Ila (the point of first sunrise after the long night).

Ila, Sarasvati and Bharati or Mahi were the celestial streams of the first, second and the third heavens respectively. These were the three parts into which Apa was divided. Agni was the sacrificing priest (I-49-4) where the waters (celestial) gathered. A similar idea is expressed in the following verse—

"May waters (apa) gathered near the Sun, and those wherewith the Sun is joined speed forth this sacrifice of ours." I-23-17.

The circumpolar part of the arctic zodiac was, of course, the place where the waters were supposed to gather, because the heavenly bodies, when reaching that part of the heaven, never used to rise or set but made a kind of circling movement. This point is made clear in the verses X-8-1, X-8-5, X-12-3, X-53-1 and X-66-8, wherein it is stated that Agni sacrificed in the heaven, called Brihaddiva. In this part of the heaven, Agni was supposed to swell into a deathless god.

The same idea of continuous heat and light is expressed in verse V-18-3. It is stated therein that Agni's car of lengthened life went unwasted hither and thither. The statement in the verse X-156-4, that

Agni made the sun an eternal star, conveys also the same idea. Agni was supposed as the establisher of seasons (*ritus*) in due order (I–95-3) and as the finder of the days' courses (i.e, the first course of ordinary days and nights after the long winter night, the long day and the second course of ordinary days and nights. Agni was the ensign of gods or devas (I-188–11) and used to precede them (III–1-17). These devas were, therefore, the powers of light as opposed to adevas, the powers of darkness.

There are some strange verses in the Vedas which suggest the idea that the Vedic people had some secret knowledge whereby they used to restore to life deceased persons. This was, however, not the case. These verses were simply recited at the close of the long winter night by the arctic priests, who apparently pretended to possess the power to revive the sun who had, according to their belief, died at the beginning of that night.–

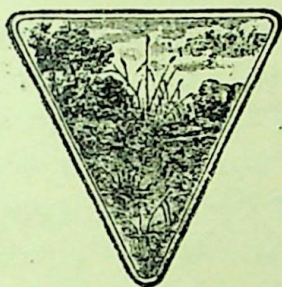
"Return, thy life now vanished into distance!

"Return, the breath thou drawest and exhalest, Agni hath snatched it from Destruction's bosom into thyself again: Introduce it." Av VIII–53-3.

"This is the mother (prithivi), this the sire (heaven) this one hath come to be thy life.

"What brings thee forth is even this. Now come Subandhu, (good friend or the sun) get thee forth." (Rv X 60–7)

"Subandhu's spirit I have brought from Yama (the god of death), from Vivasvan's Son,

"Brought it for life and not for death, yea, brought it for security" X-60-10.

CHAPTER III

Arctic Home: Puranic and Foreign Evidences.

I proceed now to discuss the evidences which are to be found in the Puranic and some other works of the Hindus in support of the arctic theory. There is a dialogue in the Mahabharata between Indra and Bali, wherein the latter had stated that the reoccurrence of fight between the Devas and Asuras would be possible when the sun should rise from all directions. This is possible only in the arctic region during the long summer day. It appears from the Valmikiya Ramayana that the sun used to revolve round the mountain Meru and this fact suggests also the idea that the race, from which the Hindus have sprung, once lived in some part of the arctic region.

A fast is observed on the eleventh lunar day of the month of Asharha in connection with the gods going to sleep. Four lunar months thereafter another fast is observed in connection with their swakening. On the full moon of Asharha god Shiva is supposed to go to sleep.

There is a legend, which is narrated in some theological works of the Hindus, about the supposed ascent of a king named Trisanku (three-pointed) to heaven. He was devourer of men and, therefore, considered untouchable. Visvamitra took compassion on him and raised him to heaven, but he was not

allowed to enter therein by Indra. Visvamitra, thereupon, created another paradise for him in the southern region by forming a new set of constellations corresponding to those beginning with the asterism Sravana.

The latter fact shows that this legend was connected with some important event in the history of the Arctic Race. This king was no individual but the demon Vritra, or the power of darkness, who used to destroy men or the ordinary days and nights which are so called in the Vedas. The three points were those which marked the commencement and the end of Vritra and the south solstice or its middle point.

New constellations were formed after the arctic people's emigration from the arctic region in the southern part of the zodiac which had been formerly beyond the horizon of the Arctic Race.

It is to be noted in this connection that the position of Sravana in the zodiac was in opposition to the head of Vritra which is now represented by the head of Hydra, called Aslesha nakshatra, and these two constellations once marked respectively the starting points of the circumpolar part of the zodiac and of that portion of the zodiac which was invisible to the arctic people while abiding in their original home.

According to another legend, the celestial ocean was churned by Devas and Asuras and the nectar found therein was distributed by Vishnu among the Devas only; but a cunning demon managed to get himself mixed with the Devas and drank the nectar

His head was consequently cut off by Vishnu, but he did not die. This legend is also probably connected with the creation of a new set of constellations in place of Vritra, whose head was, however, retained as one of the constellations of the zodiac and was named Aslesha, or the one who had lost its connection with its body. It is to be noted that the presiding deity of this nakshatra is *Sarpa* or Serpent which, in ancient times, was an emblem of Vritra.

A division of nakshatras into three parts is mentioned in the astronomical works of the Hindus, and one of these parts is called *nagabithi* or the path of of the serpent or Vritra.

A dialogue between Dhritarashtra, the blind king of the Kauravas, and a Rishi, which took place before the commencement of the great war, is narrated in the Mahabharata. The latter informed the king that there were two *lokas* or worlds, called *Naga* and *Kashyapa*. The former, of course, was the region of Hydra (long night) and the latter was a bright world of the arctic people. Sri Krishna told Arjuna, in the sacred book Gita, that he represented Margasira among the months and the spring among the seasons, but it used once to coincide with the beginning of that season. Owing to the fact that the Hindu months are not based on seasons, but on the sidereal motion of the sun, this month now occurs at the commencement of the winter season.

The month of march once corresponded to Margasira while the ancients lived in the arctic region. But the Roman branch of the Arctic Race adopted at

some subsequent period the tropical months which were based on seasons.

The word margasira means 'the head of the (sun's) path', while the word 'March' means 'the starting point (probably also of the sun's path)'. The first month of the year was, therefore, March among the ancient Romans. They used to start the year on the expiry of the long arctic night.

The mythology of some old foreign nations also supports the arctic theory regarding the original abode of the ancients. The conception of the three supreme gods of the ancient Greeks, who were supposed to devour their children etc. was possible only in the arctic region as has already been explained.

There were three chief gods of the ancient Greeks and the last of them was Zeus. The former two were in the habit of hiding or devouring their children. These children were, of course, the dawns and the ordinary days and nights which used to disappear during the long summer day.

It is stated that these gods were subsequently forced to disgorge their children. This latter fact refers to the reappearance of the so called children at the expiry of the long summer day.

The Phsygions' gods used to sleep in winter (during the long arctic night) and resumed their activities in summer.

The ancient Phoenicians believed that Ishtar was the wife of their sun-god Tamuz. Phoenician women used to bewail the supposed death of the latter in autumn, while in spring they rejoiced with music and dancing, believing that he had revived and was restored to his wife.

Osiris was the mortal sun god of the ancient Egyptians. He was the lord and judge of the departed souls and guided them to paradise. Thoth recorded judgment like the Chitragupta of the Indian Kayasthas before Osiris.

Osiris was vanquished, cut to pieces and submerged in waters by Seth or Typhon (Vedic Vritra), the power of darkness. Horus, the son of Osiris, avenged his father and destroyed the power of Seth, but he did not annihilate him.

A similar idea is expressed in the legend of Hercules, the sun-god of ancient Greeks. He is alleged to have burnt or lighted all the heads of Neomesis (Hydra), excepting one, i.e., the head which was supposed to cause the ordinary nights in every twenty-four hours.

Baldur was the Teutonic sun-god. He was slain by a blind god of enormous strength, named Hodr. Segurd, the sun-god of the Teutons, also met the same fate.

Sarpedon, a god of the Greeks, was killed by Patroklas, but he revived subsequently (after long night).

According to the Parsi scriptures, the sun, the moon, and the stars revolved round Meru Toera (Meru) of the height of Haraiti. This was, in fact, the case in the circumpolar part of the zodiac.

The Parsi Thractaona sacrificed in Varena (like the Vedic gods) and conquered and bound to a mount Azidahak, the three-headed dragon (Ahi of the Vedas).

There was also a fight between Atar (Vedic Agni) and Azi Dahak for the light of Hvareho.

The Greeks, like the Indo-Aryans, used to offer sacrfices to enable the dead to cross the dark stream of the Hades.

As stated before, there were two sects as regards the religious belief among the people of the Arctic Race from the very beginning. One believed in the superiority of the powers of darkness, while the other sect supposed that the powers of light or the Devas were more powerful than the former. The abode of departed souls was situated, according to the faith of the former, in the underworld which lay beyond the horizon of the Arctic Race, while the latter thought that the circumpolar region was the place of the departed souls. The customs of cremation and burial were accordingly followed by them. The people believing in the superiority of the powers of light used to cremate their dead, because Agni was supposed as the controller of the circumpolar region, where their gods were supposed to assemble aud perform sacrifice.

In some later period, when the arctic people left their original home and settled in some non-arctic region, the faith of the followers of the Adevas (not Devas) was somewhat modified. The worship of the powers of darkness was replaced by the sanctity of the invisible beings. It appears, however, that the people tried to assimilate these two sects, and works like Gita were composed from time to time.

Arjun (White) was the sun-god of the bright world, and though his inferiority to Krishna (Black), the sun-god of the underworld is manifest from Gita, yet they were friends and helped each other. The Vedic people believed that in their paradise there stood a tree which was the seat of the manes and the gods. It is called Asvattha in the Vedas and the Tree of Eagle in the scriptures of the Parsis, while it was named Yggdroset by the ancient Teutons. According to the traditions of the latter, Norms or the departed souls were the guardians of this Ash tree, the branches whereof filled the whole world. Under each of its three roots was a fountain (the three celestial heavens of the Vedas).

The first fountain was the abode of Asas and Norms. In the second, Mimir kept his ceaseless watch, while the third was a boiling cauldron (the circumpolar region of the long summer day). On the crown of the tree sat an Eagle; under its roots lurked a dragon and between the crown and the roots two squirrels (days and nights) ran up and down.

According to the Parsi scriptures, the Tree of the Eagle stood in the middle of the sea of Vaura-Kasha

while in Pintika, which was situated opposite to Vaura-Kasha, there were boiling waters.

Mention of this celestial tree is also found in the Vedas. According to the Atharvaveda (XVIII-2-48), there were three heavens and in the third heaven the departed souls were supposed to dwell. As regards the Vedic tree of the Universe, it is stated in the Rigveda X-135-1) that Yama used to drink with the gods under the shade of this tree. It stood in the third heaven (circumpolar region) which was the seat of the gods (Rv V-4-3).

According to the Atharvaveda (X-7-38), the mighty tree stood in the world's centre and on the water's surface with the branches round it.

The worship of the *vata and asvattha* (Pipal) trees in India seems to be due to this ancient conception of the celestial tree.

CHAPTER IV.

Arctic Origin of Vedic Divinities.

I proceed now to describe some of the Vedic deities, conception of whom was only possible in the arctic region.

INDRA

I have already described the Vedic divinity called Agni. Indra was another important deity of the Vedic people. According to verse 1-6-3 of the Rigveda, he was born with dawn and lighted the regions which had been dark. But he cannot however be identified with the sun in view of certain statements in some other verses of this work. He raised the sun in heaven (I-7-3 and I-51-4), gave life to him (I-32-4 and II-19-3), stayed the sun's horses (I-121-13), overcame Dasas (powers of darkness) with the sun's aid (II-11-4 and X-148-2), set the limits which the sun could not transgress (III-30-12), begot the sun and the dawn (III-31-5, III-32-8 and VI-30-5), rolled the sun's chariot-wheel near the people (VI-16-12), made the sun visible (VI-17-3), made the sun to rise to heaven (VIII-78-7), travelled round about with the sun's horses (X-49-7) and made a path for the sun (X-111-3).

It is clear from these statements that Indra was supposed as the originator and the controller of the sun; but he cannot, on the other hand, be identified with the Almighty God, owing to his supposed birth

together with the dawn. He was invoked for sunlight and asked by his worshippers to come. He was, in fact, supposed as the day-and-light-finding god (I-100-6, 8 and 18, III-51-2 and VI-26-3).

He was considered as the spring of shining riches (VI-36-4). He was supposed to fight with the power of darkness for the purpose of bringing light to the people (I-56-5, VI-33-4 and VII-30-2). He was producer of days (V-49-3).

Modern oriental scholars have translated the Vedas under the wrong impression that the supposed war between Indra and Vritra was for rainfall which the latter used to obstruct. The Vedas as I have said so often were composed in a very highly figurative language which is responsible for many erroneous ideas about the real contents of these works. As regards the point in question, the matter is cleared by the verse 1-56-5 of the Rigveda. It is stated therein that Indra smote Vritra dead in the light-winning war and brought floods of rain, i.e. streams of light. It was believed that there was constant warfare between the devas and the powers of darkness for light.

But, at the same time, Indra was also supposed to fight with the gathered devas (of the arctic long summer day) to win back the moon and the dawn in order to make them visible to the arctic people after the end of that day.

In the circumstances stated above, it is evident that Indra was supposed as the controller of light and

the chief of the light-producing devas. In fact, he is referred to as the chief celestial ruler in the verses I-131-1, VI-19-11 and X-50-2 of the Rigveda. According to Rv VI-30-2, Indra spread the region (bright world) and every day the sun became apparent. This ordinary phenomenon was considerd by the arctic people a great work of Indra after the long arctic night. He unbarred the firm doors of the kine of mornings (VI-17-6) and set free the kine held fast within the rock (VI-43-3). These kine were evidently the stolen mornings, for the recovery of which Indra fought (VI-60-2). Indra was the light-winner and the days-creating god according to Rv III-34-4. He was, therefore, the chief deva of the bright world of the arctic region and was supposed as its originator and controller.

There were, however, many tribes of the arctic race and each tribe had its own chief god similar to Indra.

For instance, the Iranian branch of the arctic race worshipped Ahura Mazda. Ahura was Asura of the Vedas and Mazda was equivalent either to the Sanskrit word *medha* or *mahat*. Hindu devas were the enemies of *asuras*, while the Iranian Aryans considered devas as satanic beings. It is, however, noticeable that the word *asura* is used in the Vedas both in a good as well as in a bad sense.

Indra was the asura-slayer (Rv VI-22-4), but he was himself an asura (1-54-3 etc.). In fact, all the important Vedic gods are given the epithet of asuras.

in the Rigvda, vide the verses referred to below—

Savitar	...	I-35-7, V-49-2.
Varuna	...	VII-42-1.
Agni	...	V-12-1, V-15-1, VII-30-1.
Asvins	...	X-56-6, X-151-3.
Pushan	...	V-51-11.
Soma	...	IX-73-1.
Varuna-Mitra	...	VIII-25-4, VII-65-1 and 2.

There are verses in the Rigveda which show that *asuras* were considered originally as superior to devas.

Indra, the *asura*, was the king of devas (I-174-1). His *asura* nature could never be injured (X-54-4) and his *asura* glory gave him a wide seat (X-99-2).

Agni was Rudra, the *asura* of the mighty heaven (II-1-67).

Varuna was the lord of all wealth and he was the *asura* who propped the heavens (VIII-42-1).

The *asura* Pushan granted the people all prosperity (V-51-11).

Mitra-Varuna were the *asuras* of devas (I-151-4).

It is further stated in the last verse that the efficacious power of Mitra and Varuna came from Brihaddiva, which was one of the names of the circumpolar part of the arctic zodiac, as already stated. It appears, therefore, that the devas of this region were

called *asuras* in contrast to the *sura* devas who used to rise or set. This was the reason that Indra's *asura* nature was uninjured, and he had a wide or limitless seat. This conclusion is strongly supported by some other verses of the Rigveda which are quoted below—

"Even as he mounted up they all adorne him: self-luminous he travels clothed in splendour,

"That is the Bull's, the Asura's mighty figure : he, omniform, hath reached the eternal waters." III-38-4.

"To Agni, lofty Asura, meet for worship, Steer of eternal Law, my prayer I offer......" V-12-1.

"When fair bright days shall dawn on us, O Indra, and thou shalt bring thy banner near in battle,

"Agni the Asura shall sit as Herald, calling Gods hither for our great good fortune." VII-30-3.

"May the Five Priests' Lord, dwelling in oblations, bliss-giving Asura, hear, whose paths are open (not limited)." V-42-1.

Now the question arises as to how these *asuras* lost their original importance and became enemies of the devas and mortals, as appears from later Hindu theological works. When the arctic people migrated southward and settled in some non-arctic region, the old phenomenon of the long summer day ceased. The people evidently attributed its disappearance to the

annihilation of the *asuras* by their god Indra, owing to their fiendish supernatural powers.

The following Vedic verse clearly shows that the *asuras* somehow lost their powers—

"These asuras have lost their power of magic (maya) which enabled them not to rise or set ....." X-124-5.

The people of the Aryan branch of the arctic race who had been worshippers of *asuras* and their chief, however believed that they had left the visible for the invisible world.

Many marvellous deeds of Indra are alluded to in the Rigveda. As these references furnish important evidences on the arctic home of the Vedic people, I note below some of them having allusions to the exploits of Indra—

According to I-121-13, Indra stayed the horses of the sun after the long summer day), cast them beyond the ninety-nine rivers (of the circumpolar region) and cast them down into the pit (the region beyond the horizon).

Indra was supposed to travel by the sun's horses (Rv X-49-7). Their colour was red (Rv I-6-1), bright (Rv VIII-6-24) and shining (Rv VI-44-20). They were two in number (Rv VI-27-7) and were driven by the Wind god (Rv I-121-12, III-49-4 and X-22-4). They were yoked on both sides, right and left, (east and west), of the Indra's car (Rv I-6-2 and IV-16-1).

It appears that the sun's movement without rising or setting in the circumpolar region is meant in these allusions. This view will be supported by the authority of Rv IX-75-1, in which it is stated that Soma or the moon mounted on the sun's car which moved to every side. This strange statement is due to the fact that the arctic people believed that the great brightness of the sun in the long summer day was caused by the moon, vide Rv IX-28-5. In this verse it is said that Soma mounts to the sky with the sun. The statement (Rv IX-106-8) that the gods used to drink Soma for immortality was based on the belief that the phenomenon of the sun's rising and setting the long summer day was caused by the moon which was supposed to lie in the body of Indra (IX-72-2). It was believed that the soma drink used to strengthen and enable Indra to kill Vritra, the power of darkness (Rv II-15-1) during the long summer day.

The spiral movements of the sun and the moon in the circumpolar part of the arc'ic zodiac led the Vedic poets to call Indra, controller of these heavenly bodies, as dancer (Rv VIII 24-9, VIII-81-3 and VI-29-3).

This fact explains the statement in the Mahabharata and the Ramayana that the sun used to move round Meru, the celestial golden mountain, which enclosed the supposed gathered waters of the circumpolar heaven.

The twisted hair of the Hindu gods and sages and the superstructure of Hindu temples were the symbols of the circumpolar part of the arctic zodiac.

Indra was named Arishtanemi (III-53-17) because the fellies of his car were never injured by darkness. He was Hrishikesa because he was supposed to wear golden hair on his head which represented the bright circumpolar region. He was named Satakratu because he was supposed to have performed hundred sacrifices which were represented by the hundred revolutions of the sun during the long summer day.

Indra was the destroyer of the Dawn's car (X-73-6) because dawns used to disappear during the period of the long summer day. He was called caster of stones (VIII-15-4) etc , by the Vedic poets probably because he was supposed to move the mountain of the circumpolar region, vide the Vedic verse already referred to. He is referred to in the Rigveda as the breaker of castles which were in number seven (I-74-2), ninety-nine (I-54-6) or hundred (VI-31-4 etc.). These castles were the ordinary days and nights concealed either in the long arctic night or in the long summer day. In Rv VIII-14-5 Indra is said to have unrolled the earth and made himself a gem in the heaven.

The word prithivi, meaning 'earth', is often used in the Vedas in the sense of horizon. The Vedic poets probably believed that during ordinary days this horizon came to be rolled up which caused the sun to set. In the long summer day, Indra was supposed to unroll the horizon and he made himself a gem as the controller of the sun during that period. The word prithivi, or the earth, literally means the one which increases in length.

In the following verses of the Atharvaveda, this point is further made clear—

"Burst open, Prithivi, and cleave asunder this celestial cloud (darkness)." 7-18

"As *Prithivi rests on earth* (horizon touching the earth), so do I seat thee........" 18-4

Indra is referred to as the spreader of firmament (bright heaven) and of the realms of light (circumpolar part of the zodiac) in the verse VIII-14-7. Indra is said to have made bright his brother's children (X-55-1) According to the Puranas, Indra's brother was Vritra, the power of darkness. The latter's children were, of course, nights which were made bright by Indra during the long summer day.

The power of darkness is called by various names in the Vedas, viz., Vritra, Ahi, Vala, Namuchi, etc., They are all referred to as Dasas as opposed to the Aryas, the powers of light. It is stated in I-32-2, 4 and 13 that Indra killed Ahi, let out Apa to join the ocean, gained victory over Ahi for ever and gave life to sun, dawn and heaven.

By the word apa stream of light is meant, which Indra was supposed to let out after the long night's darkness to join the ocean of the long where Indra used to gain victory for ever. The Arctic people probably supposed that the heavenly bodies were moving on the celestial waters of the heaven as I have already explained,

According to verse X-180-3, Indra gave room and freedom to gods.

The movement of heavenly bodies in the circumpolar part of the zodiac is meant in this verse, because these bodies did not use to rise or set in that part of the heaven.

It is stated in Rv VI-44-23 that Indra wedded dawns to a glorious consort (sun) and set within the sun the light that lights him and that he found *amrita* (nectra) in the third lucid region of heaven. It is clear, therefore that Indra was supposed as the invisible power who produced the sun and controlled its movements. The third lucid region was, of course, the circumpolar region where the heavenly bodies never used to set or die. Probably it was supposed that the immortality of the gods was due to the nectar which was stored in that part of the heaven.

This region of the sky is referred to as a car as well as a bolt of Indra in Rv X-23-3. According to VI-47-25, this bolt was a godlike chariot, child of Mitra and closely knit to Varuna.

Mitra was apparently the ruling power of ordinary days as Varuna ruled the circumpolar region of the zodiac. Vritra, the power of darkness, was cleft into pieces by Indra with a hundred-knotted bolt (VIII-65-2). It appears, therefore, that a knot represented a degree of the zodiac and that the circumpolar region consisted of 100 degrees.

According to Rv X-96-4, the Golden Bolt was spread out as in a race, that it was laid upon the sky and that its bearer had a thousand flames. This bolt is referred to as a whirling wheel in II-11-20.

In some of the verses of the Rigveda Indra is referred to as a god who set free the floods (II-13 5, IV-17-1 and X-133-2). These floods were the streams of light which were supposed to have been obstructed by the power of darkness during the long winter night. Indra is, therefore, called the winner of floods (*apsujit*) in VIII-36-1. Streams of light are also alluded to as riches. Indra was, therefore, the winner of riches, *Dhananjaya* (VIII-45-13).

According to verse II-12-11, Indra discovered the power of darkness in the fortieth autumn. This statement shows that the long night used to commence on the fortieth solar day after the autumnal equinox, as I shall show latter on. The night, therefore, lasted for a hunderd solar days.

According to Rv I-101-7, Indra used to speed in Rudra's region. The latter was considered as the ruling power of the circumpolar part of the zodiac by some of the arctic tribes, as Varuna was considered by some other branches of the race.

Verse VII-36-4 shows that Aryaman was the god who yoked the sun's horses in the long summer day.

It is stated in X-55-6 that Indra was the Red Bird who had no nest, that he was never idle and

knew the truth (*satya*) and that he used to win and give wealth. I have already explained that the circumpolar region is often called *Satya* in the Vedas, because the sun s movement in that part of the heaven caused the nights, which are often referred to as *asatya* or untruth, to disappear altogether. As the controller of the sun in that part of the heaven, Indra was described as the Red Bird who always used to fly and never took rest in his nest which was apparently represented by ordinary nights.

In X-73-3 Indra was asked to turn the Asvins to the arctic region. The latter gods were the rulers of days and nights as will be shown later.

According to X-96-11, the arctic people used to invoke Indra, the Asura, to disclose himself and to make the cows' home visible to the sun. This makes it clear that Indra was the ruler of the bright world, who during the long night was requested to appear and to show to the sun the home of the kine or the days.

In III-53-5 Indra, as Maghavan, was asked to depart to the place where his chariot had a place to rest in, now and then. Maghavan was the name of Indra during the long summer day, when he was often asked to go on account of the excessive heat at that time and to cause the sun to rise and set alternately.

The long day was called *Vrihaddiva* (X-120-8 and 9) as opposed to *Dirghatama* which was one of the names of the long winter night. Indra's passage

during that day was made on a chariot moving both ways (east to west and west to east) with red horses (I-6-1 and 2). These steeds were called wind-horses (I-121-12), because they were supposed to be driven by Vata or Vayu, the gods of wind.

As already stated, Indra was the spiritual power who was supposed to be the originator of the bright world. According to IV-16-4, Indra scattered the blinding darkness (long arctic night) when the heaven's fair light (Agni) was made apparent by hymns.

In V-31-3 it is stated that Indra drove out of the cave the milky mothers (first dawns) and, with the light, laid bare investing darkness. The first dawn is described in the verse VIII-6-30 as the light refulgent of prime val seed (first light after the long night). One of the names of this long night was *Agha*, and the arctic people used to pray Indra nct to deliver them to it (VII-19-7).

In this connection, I may state that according to verse X-85-33 oxen used to be killed in *agha* days and brides used to be wedded in days of *Arjunis*, i e, the bright world. This verse is reproduced in the Atharvaveda, but the words *agha* and *arjuni* are substituted by *magha* and *falgunis* respectively. These are the names of the tenth, eleventh and the twelvth nakshatras of the scheme of 27 nakshatras beginning with *Asvini*. The substitution of the original words was apparently made when the arctic people immigrated from their original home and when the invisible nakshatras, which had lain beyond the horizon, became apparent and *agha* became *magha*.

The original words simply meant that the bull (sun) used to be killed in the days of *agha* or the dark world and the dawn (bride) was wedded to the sun in the days of *arjunis* or the bright world. In further support of this explanation, it may be noted that the ancient Babylonians figured the sign of Lion as a group of lions killing a bull or the sun.

The bright world is often alluded to in the Vedas as a place in heaven where the gods used to sacrifice and which cause brightness in the arctic region. It is stated in X·73-4 that Indra, speeding at once to sacrifice, brings with him the Nasatyas or Asvins who were the gods of days.

It is stated in VIII-24-24 that Indra knew how to avoid *Nirriti* and cause the appearance of every recurring day. *Nirriti* was the power who was supposed to cause the destruction of the sun at the commencement of the long night. As this night used to begin when the sun reached the south-western part of the zodiac, this direction was called *nairritya* after the name of this deity. Similarly, the south-eastern direction was called *agneya* after Agni who used to appear for the first time in this direction after the end of the long night.

The long day used to commence when the sun reached a certain point in the north-eastern direction. This direction was called *I shana* after one of the names of Rudra, the ruling power of the long day.

This day used to end when the sun reached a certain point in north-western direction which was, therefore,

called *vayavya* after Vayu, the god of wind who was supposed to extricate the sun from that part of the zodiac where it never used to rise or set but to perform a circling movement like a ship in a billowy ocean.

According to verse III-39-9, Indra's power was never to be checked by days and nights from the moment he was born. In this verse, the words used in the text for days' and 'nights' are *dyavah* and *ahah*, but *aha* actually means 'a day inclusive of night'. It is, therefore, clear that the word *dyavah* most probably means something else.

Several similar words are used in the Rigveda which are indiscriminately translated to mean 'day', though in fact they are used to denote various kinds of the arctic days. The word *akta* has been translated to mean 'day' in VII-11-3, while in some others it has been rendered to mean 'flame', 'ray' etc.; but it is very strange that in many verses it has been translated to mean 'night', although it is evidently the antithesis of 'night'.

It is stated in II-19-3 that Indra gave the sun his life and with the night (*aktun*), completed the work of days (*anhah*). The word *anhah* actually means 'the bright part of the day, exclusive of night'; and this verse simply means that Indra, during the long summer day, completed the continuous series of sunshine-days by means of *aktun* or the parts of the long summer day. These series of continuous sunshine are also called *dyun*, as appears from certain verses of the

Rigveda. In I-121-7 this word has been wrongly translated to mean 'days of action'. The verses only means that Indra the cattle-seeker, shone forth during the parts of the long day while he was car-borne and swift. The cattle he sought were, of course, the ordinary days and nights which had disappeared during the long day The verse IV-33-7 clearly shows that the word was used in the sense of 'parts of the long day'. It is stated therein that the gods called *Ribhus* enjoyed themselves for twelve days (*dyun*) by reposing as a guest of the one (lord of long day) who can never be hidden. These are called Agni's days *duun* in X-11-7 because Agni, the diety of heat and light, was most powerful during the long summer day.

The word *ahani* has been translated to mean both days and dawns; but it actnally meant. I think, 'the periods of twenty-four hours characterised by temporary or immature dawns, wherein no sunrise was visible'. It is stated in the verse concerned that formerly there used to appear many *ahani* before the sun's uprising, but the phenomenon ceased after the appearance of *Ushas* (the matured dawn).

The verse I-123-9 shows the difference between *anha* and *aha*. It is stated therein that the dawn knows the nature of the first day (*anha*) when it appears out of the darkness (long night) and thereafter it shines day after day (*aha aha*) According to IV-16-12, Indra at day-break (*anhah apitva*) rolled the chariot wheel of the sun near the people after killing *Dasyus*, the powers of darkness. It is stated in VI-9-1 that one-half of the day (*ahah*) is black (*krishna*) and the other half bright (*arjuna*).

The above references show that the bright part of the day was called *anha* and that day and night together were named *aha*. The last verse alluded to also shows that the words *krishna* and *arjuna* meant darkness and brightness respectively.

Periods of the long day and long night were measured by means of the revolution of the circumpolar region caused by the earth's rotation on its axis. These revolutions were called *dyavah* referred to in III-32-9 mentioned above.

ASVINS

The conception of the twin deities called Asvins and Nasatyas was also possible only in the arctic region. They were the presiding deities of the ordinary days and nights and of the long day. The arctic people invoked them to come with the sun, the dawn etc. (I-47-7 and VIII-38-2).

In the verses V-75-6 and 8, IV-14-1, and VII-70-6 they were asked to come to sacrifice (in the bright world). Their car was supposed to bring light (V-74-8 and VII-67-3). According to the belief of the arctic people, they used to come by means of prayers offered by the priests (V-49-1 and VI-63-1).

During the period of the arctic winter night, people were naturally tired of the long darkness and they craved for light, as appears from the verses V-74-2 & 3 in which they showed much anxiety for the presence of Asvins.

Description of their car is given in some Vedic verses, e. g., IV-43-2, IV-44-1 and VIII-74-8. It

used to bring light, was three-seated and bore Surya (dawn or twilight), the sun's daughter. According to I 30-19, one wheel of this car was kept at the forehead of the Bull (the eastern horizon of the ordinary days) and the other moved round the sky (circumpolar region).

Asvins were supposed to yoke their car at early morning (after the long night) *vide* verse I-22-1. Their connection with the first dawn is evident from V-75-9, wherein it is stated that Asvins' immortal car used to come after the dawn with her herd (days).

The first dawn was supposed to wake the Asvins (VIII-9-17). Asvins used to remove darkness (IV-45-2) which was a great misfortune to the arctic people (I-116-21). Asvins were the finders of days (VIII-5-9) and bringers of light (VIII-8-7). They were supposed to enclose the doors of *Sindhu* (heavenly waters), *diva* (the bright heaven) and of *apa* (streams of light) *vide* verse VIII-5-21.

According to VIII-5-38, Asvins were supposed to give ten golden kings and it appears, therefore that the arctic people who worshipped Asvins probably lived in a place where the long night was of two months' duration and the remaining ten months, figuratively called ten kings, comprised the period of the long day and the ordinary days and nights. These ten kings are also mentioned in the seventh book of the Rig-veda and in the Old and the New Testaments.

It is stated in verse VI-52-11 that Asvins used to open the stall of cattle, whereby the courses of days

are, of course, meant. They were supposed to add black cows (night) to the red cows (bright day) after the long summer day (X-61-4).

According to VIII-8-23, Asvins made apparent three places which had formerly been cencealed (during the long winter night). These places were, of course, the three parts of the bright world, *viz.*, two courses of ordinary days and one of the long summer day intervening between them. In this verse, the Asvins are called *gomagha* and *asvamagha* (rich in kine and horses), which perhaps mean the ordinary days and the long day respectively.

SAVITAR Savitar was another arctic diety who, like Indra, was supposed by one of the branches of the Arctic Race as the lord of the bright world. He used to move up and down (in the circumpolar region) with two bright horses (I-35-3). His movement in this region is described in the following verse—

"Having gone up high, the God, broad-handed, spreads his arms windely forth that all may mark:

"Even the waters (celestial) bend them to his service: even the wind (celestial) rests in the circling region." II-38-2.

He cannot be identified with the sun, as is evident from I-35-7, wherein Savitar is asked as to what region the sun or or Surya has departed. The fact is made clear by I-35-9, in which it is stated that Savitar bids

the sun to approach. He, like Indra, controlled the sun as appears from IV-14-2. It is stated therein that Savitar uplifted his bannar (after the long night) and produced light by means of sun-beams.

His appearance after the long night is clear from V-82-8 according to which he used to precede the Twain (day and night).

In IV-53-1, Savitar was a god as well as *asura*, because he was the lord of both the parts of the bright world comprising the ordinary days as well as the long summer day.

Savitar used to come at the commencement of certain seasons (i.e., of the bright world) as stated in IV-53-7.

According to IV-54-2, Savitar produced immortality or *amrita* for the gods (during the long summer day) and left succeeding life to men (ordinary days). (A wrong interpretation of this verse forms the basis of the theory of transmigration of souls).

Priests were supposed to bring Savitar by their prayers (V-49-1).

Maruts (light-currents, which gathered close beside Savitar), probably represented the parts of the circumpolar region into which it was divided by the arctic people.

In IV-6-1 of the Atharvaveda it is stated that Brahma was first brought to life ten-headed. It appe-

ars that Brahma was another name for Savitar. According to XI-8-10 of this Veda, there were ten old gods before the present gods came into being. These were evidently the ten calves of Savitar referred to *below*.

Savitar was called *Apam napata* or the child of *apa* (streams of light) *vide* verse X-149-2.

This god was also controller of Asvins and was supposed to send their car before the dawn of the day to the sacrifice or the bright world vide verse I-34-10.

Savitra has been identified with the sun in the hymn VII-4 of the Atharvaveda. His going up to the highest heaven or the circumpolar region is mentioned in the first verse and his circular movement in that part of the sky is alluded to in the second and the ninth verse. It is stated in the verses 3 to 5 thereof that he was Surya (sun), Vayu, Aryaman, Varuna, Agni and Yama.

I might here point out that the distinction between certain deities of the bright world was so subtle that in stray cases cases it also led to their identification, as in the case of Surya and Savitar. It may be marked that the arctic people followed these distinctions on two separate basis of thought, *viz*, the bright world as opposed to the long winter night. But the bright world consisted of long day as well as of ordinary days, including nights, when the sun was visible. Here was, therefore, observed another distinction, viz., of the spiritual and physical deities of the bright

world. Thus, while Surya was generally the physical chief of the day, Savitar was the spiritual and controlling deity of the bright world including long day, ordinary days and ordinary nights. According to the verses 6 and 7 of the above-mentioned hymn, ten calves joined together stood close beside him with one single head. It appears that these calves, which were called the banaed Maruts (light-currents), probably represented the parts of the circumpolar region into which it was divided by the arctic people.

RUDRA Some of the arctic tribes worshipped Rudra as the controlling deity of the circumpolar region. He is described in Rv I-114-1 as the lord of heroes who bore braided hair after the shape of the circumpolar region. He was supposed to wander always as there was no night to rest during the long day (I-111-4 and X-92-5).

He is described in Rv I-114-5 as the wild boar of the sky of red and dazzling shape. He was supposed as the medicine-giver (II-33-2), probably because the long day used to be the healthiest part of the arctic year.

He was considered chief of all the shining gods (II-33-3). He is described as a tawny and brilliant god (II-33-8), because he was the supposed ruler of the arctic long day.

The strength of god-head never departed from god Rudra, because there was no night during the long day (II-33-9)

In Rv II-33-11 he is described as the fierce slayer of foes (darkness) and as being borne in a chariot. He was supposed to shoot bright arrows from heaven (VII-46-3) He was supposed to have been always young (*ajara*) because he was the controller of the sun which never set (VI-49-10).

MITRA-VARUNA The other controllers of the sun besides Indra and Savitar, were the twin deities called Mitra-Varuna. The sun was supposed to be their eye (I-115-1, VI-51-1 and X-37-1) It is stated in VII-62-1 and IV-13-2 that Mitra-Varuna were the creators of the sun and caused him to ascend to heaven. They were considered as very glorious Adityas (the heavenly bodies of the circumpolar region) vide III-54-10.

Their laws were considered ever true (V-63-1), because in their region the sun never used to set. It is stated in V-63-7 that they governed all the world by sternal order though Asuars' magic power, because it enabled them not to allow the sun to set.

According to Rv VI-67-5, they surrounded both the worlds (i.e , the circumpolar region and the rest of the heaven). Mitra, deity of the rising sun, infact controlled the sun during the day and Varuna, deity of the setting sun, in the night, and as a twin deity they governed the circumpolar region where the sun used to travel both ways i. e., from east to west and from west to east.

When the Arctic Race settled in some non arctic country and the phenomenon of the long day ceased to

exist, Varuna was made the persiding god of the western direction, as appears from the Mahabharata. It is stated therein that after the fall of Nahusha (the long day), Indra appointed Varuna as a ruler of the western region and Yama (sun of the long day) as the Presiding deity of the southern direction.

According to Rv VII-60-5, Aryaman, Varuna and Mitra, chastisers of all guile and falsehood (darkness) used to waxen in the home of law eternal (long summer day).

SURYA OR SUN

It apears that there was a class of people among the Arctic Race who believed that the sun was a supreme deity and there was no controlling power over him like Indra, Varuna etc. There are a very few hymns in the Rigveda in which prayers are offered to the sun as the supreme deity. An abstract of these hymns is given here:—

According to verse I-50-1, he was all-beholding, because during the long summer day he used to move in all directions, i. e., there was no night as was the case in ordinary days. It is stated in I-50-6 that he used to traverse the sky (*dyaus*) and the wide mid-air (*rajas*). By these two terms the two parts of the zodiac were, of course, meant.

According to I-50-8, he was borne in a car drawn by seven steeds. This verse was evidently composed in that part of the arctic region where the long summer day consisted of seven solar days only.

Sun's rising to the lofty heaven (*uttaradivam*) was supposed to remove heart's disease and the yellow hue of men according to I-50-11. These diseases were apparently caused by the severe winter and darkness of the long arctic night. This verse shows that the circumpolar part of the zodiac was also called *uttara-diva* or the northern heaven, as the abode of the Vedic people was in the northern hemisphere.

According to Rv I-115-3, the sun's bright horses used to speed round the earth and the heaven as soon as they reached the ridge of the sky or the circumpolar region.

It is stated in Rv VII-60-2 that the sun used to ascend up by both the pathways The words in the text are *ubhe udeti* or shining on both sides, i. e., east as well as west; but they have been wrongly translated to mean 'both the pathways', because the translator was not aware of the fact that the Vedic people once lived in the arctic region.

Soma or the moon is asked in the verse VIII-48-7 to prolong the peoples' existence as the sun makes the shining days grow longer. This verse refers to the long summer day and the long moonlit night.

The circumpolar region is alluded to as the high shining flood in X-37-8, wherein it is stated that the sun brings glorious light when mounting over the high shining flood.

SOMA OR THE MOON

Soma or the moon was also called Vritra-slayer

(I-91-5), because he also used to remove darkness, specially during the long winter night when he passed through the circumpolar part of the zodiac.

It is stated in III-62-13 that Soma used to go to the gathering place of the gods to give success and to seat himself in the place of the law. This place was, of course, the circumpolar region where Soma or the moon never used to rise or set, but to perform spiral movements. Movement of the moon in this part of the heaven is also alluded to in the verse VI-21-2 of the Atharvaveda, wherein his motion among the wandering stars, like that of Varuna among the gods, is clearly stated. This verse also shows that the gods simply represented the light-producing objects in the day time and that Varuna was either a name of the sun, while passing through the circumpolar region, or that of an invisible power controlling the movement of the sun in that part of the heaven. According to IV-26-6, Soma was brought by the Falcon from the highest heaven. This enigmatical verse, of course, refers to the reappearance of Soma or the moon after the long summer day. This fact is also alluded to in IX-48-5. The arctic people supposed that it used to be brought by the sun-god who was figuratively called Falcon, owing to the similarity of his movement in the circumpolar region with that of this bird.

It is stated in IX-27-5 that Soma, the gladdening draught, mounted up with Surya to the sky. Soma is figuratively called 'the gladdening draught', which enabled the sun to give the long summer day to the arctic people.

I have already referred to the belief of the arctic people that the moon used to cause the sun and his controlling powers to give glorious and continuous light during that day. There are several verses in the Rigveda in which dual deities are praised and Soma is one of them, e.g., in Indra-Soma, Rudra-Soma, Agni-Soma etc. This is, of course, due to the above-mentioned facts; because it was supposed that the moon gave more power to his allies while they passed through the circumpolar region of the zodiac, *vide* IV-28-1 and 2, IX-19-2, IX-28-5 and IV-36-3.

Soma was also called Pavamana in Book IX of the Rigveda. His going to the luminous realms of heaven (circumpolar region) is mentioned in IX-37-3.

He was supposed to engender the sun (of the long day) and the heaventl light, *vide* IX-42-1.

ADITYAS

Adityas were the *devas* or gods of the circumpolar region. Their path was, therefore, highly glorified (I-105-16). They were protectors of *visva* or the universe (III-27-4) and the guardians of the world of spirits.

The circumpolar region was supposed as the abode of the deceased. It was called *visva*. because the heavenly bodies passing through this region move in all directions of the heaven. This was the reason that the sun was supposed to behold with the eyes of *nri* (man) and with the eyes of *visva* (universe). The ordinary days were, of course, meant by the former, because the sun was supposed to go to sleep and close his eyes

during the night, while they were always supposed to be open during the long summer day and to see the whole heavenly sphere—not the half of it, as was the case during the ordinary days. Adityas were the upholders of the bright heaven (circumpolar region) and establishers of sacrifice, which was the name of the bright heaven where the gods were supposed to sacrfice (II-27-9 and X-63-5).

They were supposed to make the arctic people free and *anaga*, i. e., devoid of nights (VII-51-1). They used, therefore, to keep *nagas*, or the powers of darkness, afar (VIII-47-2).

As there was no night during the period of the long summer day, the path of Adityas in the circumpolar region was not supposed to be molested by any foe or the powers of darkness (VIII-18-2).

These Adityas were the sentinels of gods, who used not to stand still and never closed their eyes. (X-10-8).

While passing temporarily through the circumpolar region, the heavenly bodies were called Adityas. The sun or Surya, Rudra, Varuna, Pushan, Bhaga, Aryaman etc. were in their turn all Adityas.

These gods, with the exception of Surya or the sun were supposed to have been the lords of the bright world, as opposed to the world of the long arctic night. As the bright world included the nights of ordinary days, sun was not made the chief of it, because he used to be absent during the nights.

These gods were, therefore, the spiritual beings who were supposed to rule over the bright world including the ordinary nights.

Later, when the arctic people settled in some non-arctic region, the old conception of these spiritual gods was forgotten and the Vedic people began to identify them with the sun.

The Adityas were regarded as the sons of Aditi, the dawn preceding the long day. She was, therefore, ensign of sacrifice (I-113-4). She was also regarded as the mother of Rudras or Maruts (VIII-90-15). This fact shows that there was no difference between the Adityas and the Rudras. Probably Vasus was another name for the Adityas. They were gods of the *visva*, or the circumpolar region.

It is to be noted in this connection that in the Vedas we often come across various different names for one and the same deity at different occasions. Such a thing might be due to the fact that either these names were severaliy used by different tribes of the same race in the same country or, that the changes in names occured as, by and by, these people emigrated from their original homes to other places although still in the arctic region.

Aditi is described in I-136-3 as celestial and sleepless, because she was the beginning of the long day. According to I-113-19, Aditi's form of glory was dawn. This verse shows that she was the deity preceding dawn though not dawn herself,

Aditi's antithesis was Diti. According to Puranic legends, the two were the wives of Kasyapa and mothers of Devas and Daityas respectively.

Diti was apparently the deity preceding the faint light which appears before night and was, therefore, the mother of the powers of darkness.

Kasyapa was probably a name of the lord of the bright world.

ARYAMAN Aryaman was also the lord of the circumpolar region. According to I-65-6, there was a path of the mighty Aryaman in the heavens. Aryaman was supposed to have many forms and many chariots (VII-35-2 and X-64-5). These were the revolutions of the sun in the circumpolar region.

Aryaman was supposed to yoke Indra's car during the long day, *vide* VII-36-4.

YAMA Yama was the mortal sun-god of the Vedic people. He was supposed to die or to be sacrificed at the commencement of the long arctic day, whereafter he became the immortal ruler of the circumpolar region. Yama's deathless birth or rather his rebirth in the circumpolar region is reterred to in I-83-5. It was called deathless birth, because Yama, the sun-god, never used to set in that region. In this verse Yama is clearly identified with the sun. His choice of death and his sacrifice are referred to in X-13-4.

He cannot, therefore, be identified with Osiris and Tamuz, the mortal sun-gods of the ancient Egyptians and Phoenicians, who where supposed to die at the beginning of the long arctic night and revive after its end.

There is a dialogue between Yama and his sister Yami (dawn) in X-10. The sister persuaded Yama to marry her, but he rejected her offer and chose to go to the assembly of gods in the circumpolar region.

It appears from the verse X-14-11 that Yama's two gods used to guard the path leading to the circum polar region where the deceased persons were supposed to dwell. These gods had four eyes, because they were supposed to see in all directions in the circumpolar region.

According to VI-28-3 of the Atharvaveda, Yama was the first to approach the river or the celestial ocean of the circumpolar region.

Yama was supposed to be the lord of *pitris* or the deceased persons (XI-6-11 and XVIII-2-46 of the Atharvaveda). When the Vedic people left the arctic region and the circumpolar part of the zodiac ceased to exist for them, the place of Paradise in the heaven was transferred to the southern region and Yama was made by Indra the presiding deity of that direction, as appears from the Mahabharata.

There were evidently two classes of the arctic people who held different beliefs as to the locality of the supposed Paradise. While the one believed that it

was situated in the circumpolar region of the zodiac, the other thought that it lay below the horizon. The Vedic people belonged to the former class: the Phoenicians and the Egyptians to the latter.

VISHNU

Vishnu was the controller of the sun's movements in the three parts of the visible portion of the arctic zodiac or the bright world. He was supposed to measure these parts with his three steps and was, therefore, called Trivikrama.

According to Suryasiddhanta, an ancient astronomical work of the Hindus, the signs of Bull, Lion, Scorpion and Aqaurius were the footsteps of Vishnu and they were, therefore, called *Vishnupadi.* The sign marking the first rise of the sun after the long arctic night was not counted in the above-mentioned three steps of the bright world, because it was the end of fourth footstep lying below the horizon. Vishnu's three steps are referred to in I-22-18, I-154-1, I-54-2 and 3, I-155-3, VI-49-13 and VII-100-3.

Vishnu was supposed to generate the sun, dawn and Agni (the ensign of the bright world) *vide* VII-99-4.

In the arctic region the whole of the sun's path was not visible, but when the Aryan people left their arctic home and settled in some non-arctic region, the whole of the zodiac became visible to them. They then divided the zodiac into four parts consisting of 90 degrees each. This division of the zodiac controlled by Vishnu is alluded to in I-155-6.

MARUTS Maruts were the deities of the bright world. Their supposed father was Rudra who was the lord of that reigon.

Vedic authorities are not unanimous as regards the number of these Maruts, because the size of the circumpolar region varied in the different parts of the arctic region, where several tribes of the Arctic Race resided after they had left their original home.

These Maruts were the deities presiding over streams of light and their number was probably equal to the number of degrees which comprised that part of the heaven.

According to I-19-6, Maruts sat as deities in the heaven and above the sky and the "vault's luminous sphere."

These deities were asked in I-167-2 to cause the lofty heaven to approach the people. Prishni was the supposed mother of these Maruts who, according to I-168-9, brought forth the glittering army of the restless Maruts.

Maruts are described in II-34-1 and 5 as glowing like flames of fire, bearing glittering lances and passing over on their unobstructed paths (circumpolar region).

They were called sons of Rudra in II-34-9, wherein they were asked to encompass with their flaming chariot the foe of the people, or the powers of darkness.

Maruts used to shine wide abroad and measure the sky, *vide* V·55-2. Maruts used to speed over the ocean (heavenly ocean) with their bright beams (I-19-8).

They are described in I-64·2 as the Bulls of heaven, free from spots and stains, purifiers, shining bright and scattering rain (of light).

According to I-85-3, they were children of the cow (the first dawn, also called Prishni) and shone bright.

It appears from I-171-5 that the arctic people supposed the first dawn as the spring of endless mornings.

Maruts used to shine like lightning (II-34-2).

According to V-54-10, they used to appear **at** sunrise.

It is stated in VI-66-7 and 8 that Maruts used to speed along his (sun's) path through earth and heaven and to burst the cowstall on the day of trial. (The word *Marut* is used here in the singular number to indicate a collective body).

The cow-stall was the supposed home of the days and nights of the bright world and the day of trial was the first day of the sun's rising after the long night.

Modern scholars have wrongly supposed that Maruts were the gods of wind and that they used to bring rain. They were, in fact, the gods of light-currents,

as appears from the above-given references, and the Vedic poets have figuratively used the Sanskrit word meaning 'rain' for the currents of light.

PUSHAN

Pushan was another deity of the arctic bright world. He was lord of the sun's path and had goats for his steeds (in the ordinary days) vide VI-53-1 and I-138-4.

According to VI-54-3, Pushan's chariot-wheels were unharmed (in the circumpolar region) and the box of his chariot never used to fall to the ground (i.e., did not use to set).

It is stated in VI-55-1, 2 and 3 that this bright god was the lord of riches (light), wore braided hair (shape of the circumpolar region) and was called the most skillful charioteer.

According to VI-56-3, Pushan, the charioteer, guided the sun's horses through the speckled cloud (Circumpolar region)

According to VI-58-3, Pushan was supposed to travel with his golden ship across the ocean (celestial) in the midheaven (circumpolar region) to seek his beloved Surya (stolen Dawn).

He was of wondrous lustre when strong, vigorous and swiftly moving (during the long day) *vide* VI-58-4.

This god was associated with Soma, or the moon, as, according to the belief of the arctic people, the

moon was supposed to enable the gods of light to produce the long summer day.

According to II-40-2, all the gods were supposed to be joyful at the birth of Soma and Pushan.

It is stated in II-40-3 that the car of Soma-Pushan moved to every direction and that it was seven-wheeled. This fact shows that the conception of Pushan as the lord of light was made in that part of the arctic region where the long day was equal to seven rotations of the earth on its axis.

BRIHASPATI Brihaspati was one of the arctic deities who were supposed to control the bright world ot that region.

He was often called Brahmanaspati and sometimes he was associated with Indra. The ancient Romans used to call him Jupiter, Professor Max Muller's identification of the Roman god Jupiter with Dyaus Pitar of the Vedas, I think, was wrong. Brihaspati is also the name of the largest planet which is called Jupiter among the western nations. This coincidence is very significant and can only be explained by the fact that the Vedic people as well as the ancient Romans used to worship this planet as an emblem of their god, named Brihaspati or Jupiter. The ancients used to pay reverence to the planets as symbols of their spiritual deities. Thus the planet Jupiter was the symbol of the spiritual god Brihaspati or Jupiter.

Brihaspati cleft the mountains (sun's rising place after

the long night) and found the cattle (days) *vide* I 62-3.

He propped earth's ends (horizon of the bright world) and used to sit on the three fold seat (three parts of the arctic heaven), *vide* IV-50-1.

He was born in the supremest heaven, had seven mouths (seven revolutions of the sun in the circum-polar region) and used to disperse darkness (IV-50-2).

He used to battle for the stall of cattle (light or *apa*) *vide* VI-73-3.

Brihaspati drove the bright kine (days) that stood in bonds of falsehood (darkness), while seeking for light, and made apparent three cows (the three heavens of the bright world), *vide* X-67-11.

He drove darkness from mid-heaven (circumpolar region), *vide* X-68-5.

He found the light of heaven, Agni, Dawns, and forced apart the darkness with lucid rays (X-68-9).

He made the sun and the moon to ascend the heaven alternately (after the long summer day) by killing the demon Vala, *vide* X-68-10. He also caused there by, at the close of the long summer day, the reappearance of heaven with the constellations (X-65-11).

Brahmanaspati, (the other name of Brihaspati) expelled the darkness (II-24-3); and he was father of the gods (II-26-3).

He drove forth three cows from darkness and distributed them to heaven (X-67-4).

He discovered Dawn, Surya (sun), Cow and Arka (X-67-5). The word *arka* also means 'the sun,' and the use of two words for the same object here clearly shows that one of them meant the sun of ordinary days, while the other was used for the sun of the long summer day.

BHAGA

Bhaga was another deity of light. His sister was Dawn (I-123-5).

It is stated in I-136-2 that for the broad sun (of the long day) was seen a path more widely laid (in the circumpolar region) and this path was maintained with Bhaga's rays of light.

According to I-62-7, Indra, like Bhaga, parted the pair ever-united (days and nights in the long summer day) in the highest sky (circumpolar region).

Bhaga was the early conquering Aditya or the celestial body which never used to rise or set (VII-41-2).

According to X-68-2, Aryaman (sun of the long day) was brought by Bhaga.

These allusions show that Bhaga was one of the controllers of the circumpolar region.

RIBHUS

The three arctic deities, jointly called Ribhus, were the mighty powers who formed the chalices (parts into which the circumpolar

region was divided) drove the cow (mother Dawn) 'from out the hide' (long night) and wrought the two steeds of the sun, *vide* III-60-2.

According to IV-36-1, Ribhus wrought the car which rolled round the firmament without reins or horses. It also appears that the Ribhus were divine carpenters who were supposed to make the three natural parts of the arctic zodiac.

It is stated in a verse of the Rigveda, already referred to, that the Ribhus sojourned for twelve days in the abode of one who can never be hidden (during the long summer day). This shows that the conception of these deities was made in that part of the arctic region where the long summer day was equal to twelve solar days or to twelve revolutions of the sun.

DUAL DEITIES Some dual deities are mentioned in the Rigveda, who used to be invoked jointly by the Vedic priests. I have already referred to such deities of whom one was Soma, or the moon, and the other Mitra-Varuna. The other dual deitis are Indra-Varuna, Indra-Agni, Indra-Vishnu, etc.

It is stated in X-65-2 that Indra and Agni used to dwell together (in the long summer day), when Vritra or the power of darkness fell, and to speed emulously.

It appears that the sun was supposed to receive more heat and brightness in the long summer day through these powers.

Indra-Agni were asked in V-27-6 to bestow lofty rule like unwasting sun (never setting). This, of course, refers to the long summer day.

According to VI-60-2, Indra-Agni used to fight (with the powers witholding days and nights) for sunlight, water (*apa*), stolen dawns and cows (days and nights).

Indra-Varuna were called imperial lords in I-17-1.

Indra-Vayu were asked in IV-46-4 to mount the golden seated car (circumpolar region) that aids the sacrifice (long summer day).

According to VII-90-6, Indra-Vayu used to give heavenly light (whereby the stars of the heavens are meant).

It is stated in VI-69-8 that Indra-Vishnu produced this (infinite with three divisions (of the bright world). The conception of these dual deities was probably with a motive of their intensified strength supplemented with the respective qualities of each other: for illustration, Indra represented splendour, while Agni intense heat during the long summer day.

DEVAS AND DEVIS

The powers of light dealt with in the preceding paragaraphs were called Devas who were either Suras or Asuras. Those, subject to the law of rising and setting, were Suras; while those who never used to rise or set by their magic powers, called *maya* in the Vedas, were Asuras.

As already stated, the arctic zodiac was divided into three parts. In the first and the third parts Devas used to rise and set and the eastern horizons of these two parts were supposed to be *Devis* or goddesses who used to bring forth the celestial beings of lihgt. They were named Ila, Mahi or Bharati. The circumference of the part of zodiac which lay between the aforesaid two parts, and therefore called Antariksha, was the goddess Sarasvati who was supposed to give birth to the celestial beings who never used to rise or set, but performed spiral movements in that part of the heaven.

Some of the verses about these goddesses are referred to below.

Ila, Sarasvati and Mahi, who used to bring weal, were asked in V-5-8 to come and to be seated on the grass or the heavenly space. Similarly Sarasvati was asked in V-43-11 to come from high heaven.

According to VI-61-8, the flood (celestial waters) of Sarasvati were limitless and unbroken (by nights).

SUPREME GOD

In the foregoing paragraphs I have discussed the Vedic deities who were supposed to have been the powers of light. Now the question arises as to whether the arctic people believed in the existence of the Almighty God. Of course, there are clear indications in the Vedas that these people had conceived such an idea from the very beginning. There are some Vedic gods whose descriptions in the Vedas suggest the idea that the arctic

people believed actually in some higher power. I give below a brief description of these gods:—

The most ancient of them was Tvashtar. He was the earliest-born who used to wear every form at will (I-13-10). It is stated in III-55-19 that Tvashtar was the omniform creator and used to beget and feed mankind.

Accroding to X-53-9, this god was the most deft of workmen, knew each magic art (*maya*) and used to bring the most blessed bowls (parts of circumpolar region) that held the drink of the gods.

He is invoked in X-70-9 to grant the people the gods' assembly (long summer day or the long moonlit night).

He was called in II-31-4 as the ruler of the people of the world and was asked to speed forth the car (of the bright world).

Yami, the Dawn, told her brother Yama, the sun-god, that Tvashtar the vivifier and the creator had made them consorts even in the womb, vide verse X-10-5. This is a clear indication of the fact that Tvashtar was the lord not only of the bright world but of the dark world as well, which is here referred to as the womb by Yami and wherefrom Yama and Yami the sun and the dawn, were brought forth.

According to X-110-9, Tvashtar made the earth and heaven and every creature.

The arctic people used to worship the Almighty God under the name of Visvakarman or the creator of the universe.

According to X-81-2 and 3, he was supposed to produce the earth and disclose the heavens (of the arctic bright world).

It is stated in X-82-1 that Visvakarman created both the worlds (of the ordinary days and the long day) and extended the earth and the heaven.

He was called the maker and disposer of the most lofty presence in X-82-2.

According to X-82-5, he was earlier than this earth and the heaven, before the Asuras and gods (Devas) had their being.

Vivasvan was another deity to whom the description of the Almighty God perhaps applied. Agni was supposed to have been his messenger (I-58-1), probably because the former heralded the appearance of the bright world.

It appears from I-139-1 that there was a centred well of Vivasvan (which was the circumpolar part of the zodiac and which was the supposed dwelling place of that god) where Indra used to give great riches (of light) *vide* I-53-1.

Vivasvan was probably the Almighty God of the sun-worshippers who was supposed by them to control the movements of the sun.

Vedic people's description of Prajapati in X-121 applies to the Almighty God, though it is also quite possible that he might have been simply the controller of the sun. According to the first verse, Prajapati, under the name of Hiranyagarbha, fixed and held up the earth and heaven and he was the lord of all creatures. It is stated in the fifth verse that he was the cause of the earth and heaven being strong and steadfast and through him the realms of light and the sky-vault were supported and measured. According to the eighth verse, he was the god of gods, and in the tenth verse it is stated that he comprehended all the created beings.

Varuna, as already stated was the lord of the long summer day and of nights. He was, however often recognised as the Almighty God, as was the case with some other deity also like Indra etc. It is stated in VI-16-2 of the Atharvaveda that King Varuna used to know every movement of the human beings whether open or secret.

CHAPTER V.

Situation of the original abode of the arctic people.

I now proceed to discuss the evidences which will point out the terrestrial latitude of the arctic zone, where the people of the Arctic Race originally lived. The evidences are based mainly on the Vedas, ancient festivals, traditions of some foreign ancient nations and the primitive constellations which have come down to the present time from an extremely remote period through the ancient Greeks.

I have already referred to the traditions of some ancient nations about the supposed deaths and the long sleeps of their sun-gods.

Tamuz, the sun-god of the Phoenicians, used to die in autumn and revive in spring. As no particular dates of these seasons are stated, the tradition does not give any reliable information on the point under consideration.

As regards the mortal sun-god of the ancient Egyptians, there is no uncontroversial information available about the dates of his supposed death and revival though a ceremony used to be observed by the ancient Egyptians on or about 80 days after the commencement of their year in connection with the supposed death of that god.

The Hindus believe that Devas, or the gods of light, go to sleep in the month of Asharha and wake in the month of Kartika. Thus they remain asleep for about four lunar months. There are, however, some other festivals of the Hindus which are connected with the long arctic night. The eighth lunar day of the dark half of Hindu months is called *Kala-ashtami*, which, of course, refers to the old belief in the death of the sungod, as was the case with the Phoenicians and the Egyptians. This belief was afterwards modified and it began to be supposed that the sungod went to sleep during the long arctic night. The eleventh and the fifteenth lunar days of the bright half of Asharha are considered as the dates on which Devas and the god Shiva respectively are supposed to go to sleep; while a fast is observed on the second lunar day of the dark half of Asharha, Sravana, Bhadrapada and Asvina, in connection with the long sleep of a god, called Ashunya or the indestructible one. The latter fact shows that the older belief of the sun's death was rejected by some at least of the arctic tribes.

There is, however, a tradition of the ancient Greeks from which also the period of the long night of the ancients' arctic abode can be inferred. According to this tradition, Adonis (sun) was the child of Aphrodite (dawn). The latter entrusted her baby (the infant sun) to Persephoni, the queen of the under-world (the twilight preceding the long night) who subsequently refused to yield up her charge. The mother complained to Zeus (the supreme god of the Greeks), who decided that the child should remain for four months of every year with the queen of the underworld, for four months

with her mother, while during the remaining period of four months he was to remain at his own disposal.

The Vedic division of the zodiac clearly explains this legend. In the arctic zone the sun used to remain invisible to the ancients, when he was in the part of the zodiac which was beyond the arctic horizon (Hades of the Greeks); while he used to rise always with his mother Dawn during the ordinary days. When the sun used to pass through the circumpolar region, the case was different as, there was no dawn or eve during the long summer day and the sun was at his own disposal without rising or setting and enjoying himself by dancing in a circular motion.

This period of twelve months was made up by a division of the sun's path into four parts, one of which was beyond the ancients' horizon. Of the remaining three, one was the circumpolar region, called *antariksha* or the intervening heaven, while the sun's passage through the other two parts, situated on both sides of *antariksha*, used to cause the ordinary days when the sun was supposed to remain with his mother Dawn. The last three parts of the bright world were the three heavens of the Vedas.

The aforesaid four-monthly periods, which were used among the ancient Egyptians as well as the Hindus, appear, however, to have been only approximate; because the periods of the long night and long summer day can never be equal to each other owing to the Law of Refraction of Light. This natural law causes the heavenly bodies to become visible when they

are actually at about $\frac{17}{30}$ degree beyond the horizon and to continue to shine until they reach the same distance after their actual setting.

There is, fortunately, an important verse in the Rigveda (II-12-11) which indicates the actual duration of the long winter night. It is stated therein that the sungod Indra discovered the Dragon (power of darkness) in the fortieth autumn. This was therefore, the date of the commencement of the long winter night after autumnal equinox.

In the Rigveda, no calendar based on the ordinary days of 24 hours each is mentioned, but the year is divided into 360 parts. This was evidently due to the fact that the reckoning of time by means of ordinary days was not possible throughout the year in the arctic region. The reckoning was made by means of a solar day or the period of the sun's passage through one degree. It appears, therefore, that the sun was supposed to encounter the demon of darkness forty solar days after the autumnal equinox; in other words, the long arctic night used to begin when the sun had passed through 40 degrees beyond the autumnal equinoctial point. This could not, however, have been the case throughout the country inhabited by these people, but only at a place fixed by them as the starting point of their meridian.

Such a point was evidently selected by the ancients owing to the following reasons:—

The long night lasted while the sun passed through $\frac{5}{18}$ part of the zodiac and the light world comprised

$\frac{13}{18}$ part of it. The arctic people, therefore, divided the zodiac into 360 parts now called degrees, and into 18 signs (*rashis*) of 20 degrees each. The long night was equal at that meridian to the sun's passage in five such signs while the bright world consisted of 13 signs. As the part of the zodiac in the circumpolar region was slightly larger than that of the underworld, owing to the refraction of light, the arctic people further divided the zodiac into 28 constellations, since the circumpolar region covered nearly eight such constellations.

In these circumstances, the sun had to complete 50 degrees of its southern course and to move 50 degrees further in its northern course before it could have reappeared on the ancients' horizon. Thus, the long winter night of the original arctic abode of the ancients was, as stated above, equal to the period in which the sun passed through 100 degrees of the ecliptic (sun's path) or to 100 solar days. It appears from the Roman calendar that the long night used to commence at about the beginning of November and to end about the middle of February. As the sun was supposed to die in November, it was called Blod. or the bloody month, by the Anglo-Saxons. The All Saints' and All Souls' Days (November 1 and 2) are evidently the relics of the old rites which were observed in connection with the departing sun. The date of the end of the long night was February 13, or the Ides of that month; though formerly it coincided with the thirteenth day of January before the revision of the Roman calendar.

In this connection, I may point out the strange way of reckoning dates which was in use among the

ancient Romans. Dates subsequent to the 13th of February were called as so many days preceding the month of March, instead of in continuation with February. This was evidently due to the fact that the first part of the month of February (formerly January) formed part of the long winter night. This month was called January after the god Jauns (Vedic *Janita* or the producer) who was supposed to have got two faces in opposite directions, one looking to the underworld and the other to the bright world.

The ancient Roman festival, called Faunalia, which was held on February 13, was evidently connected with the sun's uprising after the long winter night. The ancient Greeks also used to perform rites for the departed souls on February 13. The Roman festival, called Nemoralia held in honour of the moon or Diana on August 13, the Ides of that month, was also a relic of the past. It was observed in the arctic abode of the ancients in connection with the appearance of the moon and the dawn after the long summer day.

The All Souls' Day of the Parsis is observed on the nineteenth day of their ninth month, on which date they perform some rites in connection with the departed souls of deceased persons whose dates of death are not known. According to their tradition, this ninth month was formerly the last month of the year; and, in fact, it was so in the original arctic home of the ancients, as it was the last month of the bright world.

The Romans' date of this rite was, as stated, November 2, which was the ninth month of their old cale-

ndar beginning with March. There was, thus, a difference of seventeen days between the dates of this rite, according to the Parsi and Roman calendars. This was due to the fact that the Parsi year originally used to commence after the end of the long arctic night, while, according to Roman calendar, this night ended at about the middle of January (now February).

Some Iranian king, however, modified the former calendar by making it to begin with the vernal equinox. The seasonal rites of the Parsis, called Gahambers, however, clearly indicate the original character of their calendar. These rites are called seasonal, but their dates of occurence show that they were not certainly based on the ordinary seasons of the year. They are, however, well-suited to the abnormal seasons of the ancients' arctic home. The dates of the first three Gahambers were fixed according to the Mexican months of twenty solar days each. The first Gahamber takes place 40 days or two solar months after the commencement of the year. This date coincided with the vernal equinox in the arctic region and it used to occur there 40 solar days after the end of long night. The second Gahamber was observed 60 solar days later than the first or at the end of the first solar month of the long summer day. The third Gahamber rite was performed at the close of the long summer day or at the close of the ninth solar month of the Mexican kind. The fourth Gahamber used to take place one lunar month after the end of this long day, while the fifth Gahamber was observed at the close of the first lunar month of the long arctic night. The rites of the sixth or the last Gahamber were performed at about the end

of that night. It is noticeable that there was no Gahamber for the autumnal equinox, though there was one for the spring equinox.

This was due to the fact that a grand festival used to be held on the former day in honour of king Jamshed who was killed by Zohak, the serpent-headed king. He had a serpent on each of his shoulders, which formed part of his body. The latter fact shows that these kings were not human beings. The former was the mortal sungod of the Parsis, like Osiris, of the Egyptians, and the latter represented the power of darkness during the long arctic night, like Naga and Vritra of the Vedas.

It appears that there was no common belief among the arctic people regarding the cause of the sun's disappearance at the advent of the long arctic night, or, that their ideas in this respect underwent changes from time to time. Some believed that he used to be killed by the powers of darkness and to revive at the end of the long winter night, while some others thought that he used to sleep during the period of that night. It was also believed by some people that he used to go to the underworld to fight with the demons of darkness and to emerge therefrom after overpowering them. Some, again, thought that the goddess Dawn, the supposed wife of the sungod, used to go periodically to the under-world in search of her husband and to rescue him from the powers of darkness. There were others who believed that the twilight preceding the long arctic night, which was supposed to bear some relation with the ruler of darkness, used to give birth to or rear the

infant sun during the long night. The sun, on attaining maturity, was said to kill the said relative of his mother and emerge from his country, the underworld. The legends about Krishna and the Moses are perhaps the outcome of such beliefs.

It is also strange that the adventures of Rama can be found remarkably suiting to the supposed adventures of the arctic sungod. Before marriage, he was living with his father (the ruler of the underworld) As soon as Sita (the dawn) appears and is married to Rama (sungod of the ordinary days), his father (the ruler of long night) ceases to exist and the couple together with Lakshamana (moon) have to roam about (in the course of ordinary days and nights) till they reach the golden Lanka (the advent of long day) when Sita is abducted by Ravana (dawn disappearing in the long day) and Lakshamna (the moon) also killed. On the death of Ravana (close of the long day), Sita is recovered and the moon reappears, whereafter they journey on through ordinary days until they reach their home, when Sita is again abandoned (owing to the advent of long night). These circumstances show that the legends of our prophets and heroes were not infrequently shaped according to the arctic ideas of the ancients.

The dates of the four *yugas* mentioned in Hindu theological works also prove the natural divisions of the arctic zodiac. These *yugas* were originally the names of the four natural parts of the year in the arctic region. The long night and the long day were respectively called the Kali and Dvapara *yugas* and were sub-

divided into two parts each by the solstitial colure, one half of each forming part of the northern course of the sun, while the other halves of the southern course. The Krita and the Treta *yugas* were the names of the two parts in which the ordinary days and nights used to occur and which were further subdivided into two parts each by the equinoctial colure. The word *yuga* means 'a couple'; and these parts were so named because of their sub-divisions by the aforesaid colures.

The above fact is supported by Rv VIII-90-14, wherein it is stated that the sun having passed through three *yugas* entered the fourth and the last one. Subsequently these *yugas* came to be regarded as cycles of very long periods; because some arctic tribes started their own cycles when they designed their signs and asterisms, and called them eras cf creation which were anologous to Hindu *Kalpas*. These *Kalpas* were each divided into four minor cycles; and every minor cycle commenced generally on the expiry of the period in which the precession of equinoxes changed the position of the ecliptic by 90 degrees or by the distances of the natural parts of the arctic zodiac. Some later Hindu astronomers tried to use these cycles for astronomical purposes by increasing the periods of their duration, as also by changing their original order. According to their works, all the *yugas* should commence from the same date, which was not the case with the original *yugas*, as appears from certain Hindu theological works regarding the dates of festivals, fasts etc.

In accordance with these works, *Kritayuga* began on the ninth lunar day of the bright half of Kartika, *Dvapara* on the thirtieth lunar day (conjunction of the sun and the moon) of the month of Magha, the Treta on the third lunar day of the bright half of Vaisakha. Thus, the difference between the first and the second was about eighty solar days and that between the third and the second about 260 days.

Authorities are not unanimous about the date of *Kaliyuga*. But it is clear from the dates of the other three yugas that they were based on the arctic division of the year into four parts which are alluded to in the aforesaid Vedic verse. These *yugas* or parts of the year were, therefore, equal to the sun's passage in 100 (*Kali*), 80 (*Krita*), 100 (*Dvapara*) and 80 (*Treta*) degrees. The *yugas* of the ordinary days are figuratively referred to in the Rigveda as *Manush yugas*, or the yugas of mortals, while the *yuga* of the long summer day is called *Nahusha* or the Devas' *yuga*.

Two parts of the Deva *yuga*, called the *Purva-deva-yuga* and the *Uttara-deva-yuga*, are also mentioned in the Rigveda. They were meant to represent the long summer day.

It appears that the periods of the long night and the long day were made equal for the sake of convenience, though, in fact, the latter was longer by about three days, the actual period of the four original *yugas* being 103, 78½, 100 and 78½, solar days.

Thus, the actual distance of the ancients' meridian

from the equator was about $15\frac{7}{15}$ degress. This deducted from 90 degrees gives the probable terrestrial latitude of the ancients' abode, viz., $74\frac{8}{15}$ north. This, however, is a rough estimate, because it is based on the present value of the obliquity of the ecliptic which decreases by about 46.85 seconds in a century.

But it has come to my notice that the arctic people changed their meridian occasionally, either owing to their movements southward or for some convenience. It is stated in Chanakya's Arthashastra that, besides the ordinay months, two other kinds of months of 40 and 35 days were in use. The first was called *gaja* (elephant) and the other *asva* (horse). These were of arctic origin and were based on different divisions of the arctic zodiac from those mentioned above.

As regards the actual situation of the original home of the Aryan Race, the evidences available in Hindu works are below discussed—

According to a legend in the Hindu Puranas, the sungod Vishnu was sleeping at the beginning of creation on a huge water-snake, called *Seshanaga* (Ahi of the Vedas), in the sea of milk.

The latter was, of course, the ice-covered ocean of the arctic region; and it is quite possible that the present White Sea in Russia is a remnant of that ocean which was called *Kshira Sagara* by the Hindus.

There is no mention of any country or place in the Rigveda, but the people, who came in contact with

the Arctic Race during its immigration southward, are occasionally described as eaters of raw flesh and as noseless *Dasyus.* It appears, therefore, that the arctic people passed through countries inhabited by the Mangolian Race.

Some people, called Kikatas, are also referred to in the Rigveda and it appears therefrom that these people reared cattle but did not drink their milk or eat their flesh. It is well-known that the ancient Chinese, who were Mongolians, did not use to drink milk. It is, therefore, very probable that the Mongolians are referred to in the Vedas as noseless Dasyus. In the Kalki Purana, people of Magadha are also called Kikatas, and it is quite possible that the Mongolians might have immigrated into India or that their population extended upto this place at that time. I think the Pandavas of the Mahabharata were the latest immigrants of the arctic people, who passed through China to India.

In this connection it is noticeable that the Chinese still use the scheme of 28 nakshatras and the scheme of the arctic signs. The practice, among them, of adding a lunar month to a solar year in order to adjust the lunar year is the same as is prevalent among the Hindus. Like the Hindus, they call their lunar months after nakshatras.

The present names of the Hindu months are not traceable in the Vedas or in the works of the pre-Mahabharata period. They were probably introduced here by the nation to which the Pandavas belonged.

The Arabs also used the scheme of 28 nakshatras; and it is quite probable that the nation from which the Pandavas sprang emigrated from India to Arabia *via* Malabar.

As regards the longitude of the place which was fixed by the arctic people as their meridian, I think that it passed through Lanka. The meridian of Lanka has ever been used by Hindu astronomers; but nobody knew where that place was situated. It is stated in Surya-siddhanta that the longitudinal circle from the pole to Lanka passed through Avanti (Ujjain, Kurukshetra and Rohtak).

It is, however, to be noted that, according to Vraaha-Mihira, the difference of time between the Benares and the Indian (Lanka) meridians was $1\frac{2}{3}$ *ghatikas*. The starting point of the Indian or the Lanka meridian was, therefore, situated at $73\frac{1}{60}$ degrees east of Greenwich.

Assuming that the longitudinal circle, starting from Lanka, passed through the place which was fixed by the arctic people as their meridian, the situation of that place was at $74\frac{8}{15}$ north latitude and $73\frac{1}{60}$ longitude east of Greenwich.

CHAPTER VI.

Branches of the Arctic Race.

I intend in this chapter to discuss certain eras and epochs of the various branches of the Arctic Race and to determine thereby some historical account of these nations. But before doing so, I should, I think, give my views regarding the eras of creation and of the Great Deluge, which have come down to the present time through four ancient nations, as far as I know, including the ancient Greeks, which, however had only the creation era.

I have no desire to belittle the importance of any sacred books connected therewith, as it is my honest conviction that their original texts in the dead languages were not correctly translated as regards the words used in connection with the creation in those texts.

Unanimity apart, the eras of creation and deluge are so distantly dated from one another amongst different nations that it is hardly possible to believe in the accuracy of one and disbelieve in the others. Modern discoveries of geologists, moreover, do not support the validity of these eras.

As I have already stated, there are certain hymns in the Rigveda on the subject of creation; and it is very strange that nothing is said therein about the creation of animal life including human beings. It

is stated in one of them that the Providence created days and nights, years, the sun, the moon and the three parts of heaven including the Paradise. In fact, it is stated in one of the verses of another hymn that the world was existing before the gods (devas) were born. It is stated in the Atharvaveda that there had been ten original gods before the other gods came into being. The latter must, of course, have been the gods of the time when the verse in question was composed.

It is clear from these facts that the word *srishti*, and other similar words, used in the Vedic texts, did not mean the creation of living beings but were used in some other sense.

The sun, the moon and other heavenly objects used to appear periodically on, and to disappear from, the horizon of the arctic people for a considerable period during the year. I think the appearance and the disappearance of the bright world was originally meant by the words 'creation' and 'destruction'

The whole of the sun's path was not included within the horizon of the arctic people and they could not, therefore, design constellations for the hidden part. When they immigrated from their original country and settled in some place where the whole of the sun's path was visible to them, they had do design new constellations and perhaps to revise the older ones. I am almost certain that the creation of these constellations was meant by the word *srishti*. The various eras of creation marked, therefore, the periods when the

several tribes of the Arctic race designed their own sets of constellations, signs, etc.

As regards the Great Deluge, it appears from the Vedas that it was the idea of these people that the northern part of the sun's path, which was situated in the circumpolar region and where the heavenly bodies did not use to rise or set but to perform a spiral or circular movement, was the reservoir of celestial waters whereon they used to voyage. When this phenomenon ceased on account of their immigration, they attributed its cause to the downpour of celestial waters on the earth, or its descent from the heaven in the form of a river, as the traditions about the sacred Ganges and the Parsi celestial river Ardvi Sura Anhita suggest.

The ancients had apparently left a pictorial record of their residence in the arctic region and of their southern movements by designing some constellations of watery symbols, which fortunately have come down to the present times. These star-groups were formed in the northern part of the zodiac which lay within the circumpolar region and which was regarded as the shining celestial ocean, owing to the spiral movement of the heavenly bodies while passing through that region. This region, however, gradually contracted in proportion to the ancients' downward movements; and when it finally ceased to exist, the ancients presumed, as already stated, that the upper celestial waters flowed downward and formed the southern boundary of their horizon.

This fact also accounts for the strange expressions in the Vedas that the gathered waters were released by Indra. These watery constellations are described below—

1. Pegasus, or the winged sea-horse, was formed over the supposed shining ocean. Its connection with the supposed ocean is supported by a tradition of the ancient Greeks. It is alleged that the sun-god Hiphonoos (Vedic Indra) won a victory over the monster Belleros by means of Pegasus, the winged horse, which had sprung from the fountain of Possidos (circumpolar part of the zodiac).

2. The constellation, called Pisces, was evidently the representation of the Fish of Fifty Fins, which is alluded to, as an object of worship in the scriptures of the Parsis. It appears that the constellation was originally 50 degrees in length Kama (desire personified) is the Hindu god of love, who is also called Minaketana, because his emblem was a fish. He is associated with the spring season and is supposed to have been burnt (as a consequence of the disappearance of the long day) by the supreme God Siva. Kama was the chief god, a gentle guide and a giver of heavenly light, according to certain verses of the Atharvaveda. According to Av III-9-7, he is alleged to have passed into the sea (celestial). These facts show that Kama was the sun-god of the long continuous day who was supposed to cross the celestial sea on the back of a fish.

3. Aquarius, or the water-bearer, was another constellation of the watery symbol. As given in the

Encyclopaedia Brittanica, this constellation was represented, in the zodiacal symbolism, either by the god Ramman pouring water from a vase, or by vase and water without the god. The Sanskrit name of the constellation is Kumbha, which means a jar.

It appears, therefore, that the constellation originally represented the circumpolar nature of the northern part of the zodiac; and the god pouring down was subsequently figured after the disappearance of the phenomenon of the long arctic day as a consequence of the ancients' immigration from the arctic region.

4. The fourth marine constellation which was formed by the ancients to represent the circumpolar nature of the part of the zodiac is the one called Dolphin. It is alluded to in a tradition of the ancient Greeks that their sun-god Phoebos was alleged to have traversed the sea (celestial) on a boat in the form of a fish and disembarked like a star in the shape of a dolphin (sea-bird).

5. Eridanus, or the river, is another constellation which was designed by the Arctic Race to indicate the disappearance of the phenomenon of the long arctic day. Eridanus was called Ila in the Vedas and Ardvi Sura by the Parsis. As already stated, this celestial river is evidently the celestial Ganges of the Hindus.

Another point I might explain here is the fact that the festivals of many nations are incorporated in Hindu almanacs, as readers will find in the treatment of the various eras given hereafter. It seems that almost all

the tribes of the Arctic Race, who immigrated into India one after another, left some of their colonies in this country when driven out by a new-comer. In fact, the Hindus consist of the people of nearly all the various branches of the Arctic Race and this is the reason that they are divided into so many classes.

1. EGYPTIANS.

The most ancient era which has come down to the present time is that of the ancient Egyptians which, according to certain Indian almanacs, began in 25653 B.C ; while according to the sidereal time of reckoning, this was started 22551 years before the Kali era of the Hindus.

In this connection I may explain that the Christian era of tropical years is based on seasons, while a sidereal year is equal to the period during which the sun starting from a fixed star returns to it again.

The Egyptian era is certainly not a fictitious one, as I have found by actual calculations based on modern discoveries regarding the rates of precession of the equinoxes as well as those of the lunation.

The era commenced at the time when the southward course of the sun used to begin from the first star of the sign of Twins (Mithuna) which is situated on the sun's path. This is one of the signs which have come

down to the modern times from very remote period through the ancient Greeks.

I found by calculation that a full moon coincided in 25653 B.C. with the sidereal point which was situated at a distance of 332·502 degrees from the vernal equinoctial point of 1913 A.D. It is noticeable that the Egyptian sign of Aquarius (Kumbha) commenced from 332·696. Thus there was a negligible difference of 0. 194 degrees between these two figures, of which the former is based on the rates of lunations while the latter on those of precession. I may also note that in these calculations, use is made of the Kali's meridian of midnight Lanka. It appears that the Egyptian tribe of the Arctic Race started their lunar calendar ten solar days later than the first rising of the sun after the long midnight. It is remarkable that the month of Magha of the Kali era commenced almost a sign earlier than the Egyptian sign of Aquarius, and the sign of Capricorn (or Makara) is almost equivalent to the month of Magha. It is clear, therefore, that the old Hindu calendar beginning from Magha was based on the Egyptian signs.

A very ancient Sanskrit verse, refering most probably to this era, has been quoted in the ancient Sanskrit work Nirnayasindhu. According to this verse, the great full moon of Magha occured when the Saturn was in the upper portion of the sign of Mesha (Ram). The moon and the Jupiter were in the sign of Sinha (Lion), while the sun was in the asterism called Sravana. This suits the full moon of the last month of the Egyptian lunar calendar, if the scheme

of 28 nakshatras were meant. It is to be noted that the two great bathing festivals at Allahabad and Hardwar cccur when the sun enters the sign of. Capricorn (Makara) and the sign of Mesha (Ram) repectively. These festivals were, therefore, originally connected with the end of the long winter night and the beginning of the long summer day. Thus the position of the Sun, the Saturn and the Moon and Jupiter, mentioned in this verse marked, at the time, the end of long night and the beginning and the end of the long summer day respectively.

The question, however, arises as to whether the arctic people used the scheme of 12 signs of 30 degrees each or that of 18 signs of 20 degrees each The former is used throughout the world, while the latter was current among the ancient Mexicans. In my opinion, both of them were used by the arctic people, as appears from the fact that among the ancient signs, which have come down through the ancient Greeks, the sign of Ram consists only of about 20 degrees, while that of the Bull extended upto 40 degrees. The Babylonian sign of Aquarius commenced about 20 degrees earlier than the same sign of the ancient Egyptians and their sign of the Bull coincided with the beginning of the long arctic day in 25653 B.C. It is also to be noted that the full moon of the eleventh Jewish month corresponded to the sun's first rising point (sidereal) at the commencement of the Egyptian era. In these circumstances, it appears that the Egyptian division of the arctic zodiac was the basis of many ancient calendars, as I shall show later on. The long night used to com-

mence at that time when the sun reached the sidereal point which was situated at a distance of 222·696 degrees from the vernal equinoctial point of 1913 A. D. This almost coincided with the end of a full moon of the ancient Grecian calendar which was in use at the beginning of their era. This date coincides, according to solar reckoning, with the *Gopashtami* of of the Hindus which is held in honour of cows. According to the Rigveda, the light-producing phenomenon figuratively called Heavenly cows, were supposed to be shut up in a cavern during the long night and this festival was most probably held in honour of the departing lights. The stable of the celestial cows or the invisible world was the *goloka* of the Hindu Puranas.

The ancient Egyptians, however believed that their sun-god Osiris used to die at the end of autumn on the 80th day after the commencement of their tropical calendar based on seasons. The first month of this calendar was called Thoth after their moon-god, because this was the first month in which the moon used to shine after its disappearance during the long summer day which lasted for about 100 solar days. The idea of the sun's supposed death was; therefore conceived later on when there was a change of half a lunar sign caused by the precession of equinoxes. Among the Hindus, the ceremonies in connection with the supposed death of the sun-god were probably held on Kartika-*badi-ashtami* called *Kala* (death)-*ashtami*, the sidereal point thereof being 208.143 degree. When the precession of equinoxes caused a further change in the commencement point of the long winter night by

half a lunar sign, another change in the religious idea of the people evidently came into vogue. It was supposed that the goddess Dawn used to disappear from the horizon to fight with the demon of darkness. The beginning of long night then coincided with *Mahashtami* of the bright half of Asvin. On this day, the goddess Durga is still worshipped as well as the night which is still called *Mahanisa* or the long night. Durga was apparently so named, because she was supposed to assail the fortress of the chief of darkness. This important festival in honour of the goddess was also celebrated by the ancient Greeks and they also used to observe it with nine days' fast, as is also the practice among the Hindus. The festival seems to be of Greek origin, as a full moon and a sign of these people used to end on this day which, according to sidereal reckoning, coincides with the point which was situated at a distance of 193.590 degree from the vernal equinoctial point of 1913 A.D.

When the zodiac underwent a further change of half a lunar sign and the long night used to begin at 179·037 degree, the worship of the goddess Dawn under the name Matri (called by a similar name by the Egyptians also), the supposed conqueror of the powers of darkness, came into existence as well as the worship of King Varuna, the supposed ruler of the long day. The great festival of Mahavaruni is still celebrated on the day which coincided at the time with the beginning of the long day. When there was a still further change of about a lunar sign in the position of the zodiac owing to the precession of equinoxes, the long night began to conincide with the birth-day of Lord Krishna;

while the beginning of the long summer day occurred on the greatest festival of Lord Siva, called Mahasivaratri. It was so called because it was the last night which preceded the long summer day. It is stated that the great Siva gave splendour like hundreds of suns on that day. The deity is also called Rudra who, according to the Vedas, was a constant roamer and of a brilliant, dazzling shape. He was, therefore, so named in contrast to the Lord Krishna, the sun of the long arctic night. Another sect probably called Rudra by the name of Rama, the wanderer, who rescued Sita from the imprisonment of Ravana, the ruler of the supposed golden Lanka which was a figurative name for the long summer day. Sita was the goddess Dawn who disappeared from the peoples view during the course of that day which lasted for about 3⅓ months. Ram-navami, or the birth-day of Rama, used to coincide at the time with the midsummer day Among the ancient constellations, which have come down through the ancient Greeks, there is one named Andromeda which is figured like a lady bound in chains and her supposed deliverer Preseus is standing by her side. The same idea of rescuing the goddess Dawn from her supposed imprisonment during the long summer day was also expressed by the ancients by means of another set of constellation now known as Cassiopeia (a lady stated on a chair) and her deliverer Cepheus, the hero. The same idea of the ancients was probably the basis of certain Hindu myths. Sati, the wife of Siva, lost her life at the beginning of long day in the supposed sacrifice performed by Daksha. This long day is figurativelv called *yajna* or sacrifice in the Vedas. Siva destroyed this sacrice and at the close of the long

day married the new dawn named Parvati. Another myth is connected with the murder of his mother by Parasuram in obedience to his father, Yamadagni, and her subsequent resuscitation. The last dawn preceeding the long summer day, was supposed as the mother of the long day who was killed by her son and subsequently revived by him, the said sun-god, after the close of the long summer day. Similar myths were current among the ancient Greeks whose gods devoured their children but were afterwards forced to disgorge them. The Vedic Indra also forced Dyaus, the engulfer, to a similar disgorgement.

The position of the zodiac and the sun's path at the beginning of the Egyptian era was the basis of the several schemes of signs as well as of nakshatras or asterisms (star-groups). One set of signs marked, as already stated, the commencement of the southward course of the sun and the end of its northern course. The first sign of this scheme was, therefore, called Mithuna or Gemini because it was the northern junction of the southern and the northern courses of the sun. The chief god of the ancient Egyptians was a dual deity called Amon-Ra. This was also the case at the beginning of their era in the arctic region as appears from the above mentioned fact. The two asterisms lying on both the sides of the summer solstitial point at the time were called Invaka and Vahu (now called Mrigshira and Ardra) by the ancient Hindus. Their presiding deities are Soma and Rudra respectively and it is noticeable that a dual deity called Soma-Rudra is often mentioned in the vedas. When there was a change of 160 degrees or 8 signs in the posi-

tion of the zodiac, another dual deity called Mitra-Varuna in the vedas, was conceived by the ancients but in these books these deities are hymned jointly as well as separately. They are the presiding deities of the asterisms called Anuradha and Shatvisha respectively. The circumpolar part of the zodiac, lay at the time between these two Nakshatras, the former lying at the beginning and the other at the close of that region. They were therefore supposed as the rulers of the northern and southern parts of that region. The solstitial colure then passed through the constellations called the Archer and the Corona Australis. The sun in the long summer day was represented by the former as shooting the arrows of heat and light during that day while the other represented the circular form of the circumpolar part of the zodiac. This is the reason that the Hindu sun-god named Vishnu is supposed to use arrows and chakra (wheel-shaped weapon). The worshippers of this god who are called Vaishnavas had dual deities named Nar and Narayan. These words literally mean a man and the one whose abode is in waters respectively. The former was the name of the mortal sun-god of the ordinary days in the Arctic region while the latter was the immortal sun-god of the long summer day who never used to rise or set and performed a spiral movement during the course of that day.

Another scheme of the zodiacal signs was designed with reference to the sidereal point (222·696 degree) marking the commencement of the long midnight at that time. This was the starting point of the sign of Scorpion as used by the Babylonians, Malabarians,

Arabs and probably the Chinese as well. There was another scheme of signs which was started from the first rising point of the sun (sidereal) at the commencement of the Egyptian calendar. According to this scheme, the star Tau Arietis marked the end of the sign of Ram and, in fact, this is the case with this sign as figured among the old constellations, which have come down through the ancient Greeks. This scheme is evidently referred to in the Sanskrit verse mentioned above. There was another scheme of the signs which was used by the ancient Romans and which was started from the beginning of the second quarter of the long summer day. This, therefore, began twenty-five solar days before the midsummer day, and, in fact, the latter still occurs on or about the 25th June. This was the origin of the Roman calendar now used by the Christian nations. The sidereal point coinciding then with the beginning of June was 67·696 degree at the commencement of the Egyptian era. The sidereal points mentioned above are, of course, to be reckoned, as already stated, from the vernal equinoctial point of 1913 A.D.

As regards the different schemes of nakshatras, their starting point was the beginning of the southern course of the sun (92. 696) at the time of the Egyptian era. The first nakshatra was Ardra.

The long night of the arctic region used to commence when the sun reached the end of the nakshatra called Svati. Its old name was Nishtya, which means 'chaos or the end', because it marked the end of the bright world at the beginning of the Egyptian era.

The sun used to rise first after the long night at about the beginning of the nakshatra, named Dhanishtha or 'the source of riches'. In the Vedas the sunlight is often termed 'riches', which was, in fact, so valued by the arctic people. This nakshatra was, therefore, called Dhanishtha as it was the first asterism of the bright world. The circumpolar region used to commence, at the beginning of the Egyptian era, at about the starting point of the asterism Apabharani, because this part of the heavens was the place of the bright stream of light called *apa*. As this region was supposed by a section of Deva-worshippers of the Arctic Race as the abiding place of the departed souls, the presiding deity of this nakshatra was chosen Yama, the god of *pitris or* departed souls. The winter Solstitial point then lay in the Hindu asterism called Mula. It was so named because it was the Mula or root of the celestial tree which was supposed to represent the zodiac and which was called Asvatha in the Vedas. This tree is also referred to in the Teutonic and Iranian mythologies.. Its root was in the under-world below the horizon at the beginning of the northern course of the Sun. This fact is made clear by the Hindu name of the aforesaid Nakshatra.

There are some Hindu festivals which are connected with the Egyptian era. The festival of *Saluno* or Sravani used to occur, at the beginning of this era, at the end of the long summer day. Two kinds of ceremonies are observed on this day. One is in connection with the sacred thread of the Brahmins, which was the emblem of the circumpolar part of the arctic zodiac wherein the sun never used to rise or set. The great

Soma sacrifice used to be performed on this day in honour of the moon-god who was about to make its reappearance after its long absence during the long summer day. The second ceremony on this day is connected with the worship of serpents which, according to the Grihya Sutras, was continued during the succeeding four months. This second ceremony was started when the sidereal point of this festival (142.696 degree) coincided with the beginning of the long winter night. Another Hindu festival, which has come down to the present time, is connected, as already stated with the worship of cows and is held on the 8th lunar day of the bright half of Kartika which, at the beginning of the Egyptian era, coincided with the commencement of the long arctic night. The beginning of the long day at the time coincided with the second or the third lunar day of Vaisakha. The former of these dates is the birth-day of Parasurama, an incarnation of God Vishnu, and the second day is held very sacred by the Hindus and is called *Akshaya tritiya*; because any good actions done on this day are considered indestructible, like the undecaying sun (*ajara*) of the long summer day. Festivals of Sripanchmi (a *kalpadi* lunar day) and Dashera are evidently of the Egyptian origin as the former coincides with a conjunction of the sun and the moon according to the Egyptian lunar calendar while the latter occurs exactly six solar months later. These festivals were evidently instituted in honour of the disappearing goddess Dawn when they coincided with the beginning of the long summer day and the long night respectively. It is however more probable that these festivals were connected with the immigration of the Egyptain tribe of the Arctic race from

the arctic region to a non-arctic one. The former then coincided with the summer solstice and the latter with the winter one. This view is supported by a legend in the Hindu theological works about churning of the celestial ocean by the gods of light and darkness. Fourteen jewels were produced from the aforesaid ocean including Shri, the goddess of wealth. These festivals were therefore instituted in honour of the goddess Dawn which appeared as if victorious for the first time on the solstitial days or the mid-summer and the mid-winter days. The other jewels were apparently the new asterisms formed at the time and the invisible moon of the long day.

Some of the ancient Egyptian festivals indicate their arctic origin. According to western researchers the first solar month of the ancient Egyptians was, as already mentioned, called after the moon-god; because the moon used to make its first appearance in that month after the long arctic day. The nineteenth day of this month was devoted to moon's worship. According to my calculations, this date was the conjunction of the sun and the moon and the latter was therefore, invisible. It was the moon's first disappearance after the long summer day and the moon-god was, therefore, worshipped on this day. The ceremonies connected with the supposed death of their sun-god Osiris, at the beginning of long night, has already been referred to. This day was, therefore, considered very inauspicious by the ancient Egyptians. Four weeks prior to the death of Osiris, a festival of staves was held, because the sun-god was supposed to need the help of a walking stick in his old age.

The northern course of the sun used to begin at the end of the tenth solar day of the fifth month of the Egyptian's solar calendar. Isis, the goddess of Dawn, was supposed to defeat the powers of darkness on this date in order to come to the help of the arctic people. The first rising of the sun after the long night at the commencement of this era used to occur on the full moon of the month of Magha and this day is still held very sacred by the Hindus.

About 179 days after the death of Osiris, a festival in honour of this god used to be celebrated among the ancient Egyptians, when it was supposed that the sun-god was found again. This used to occur at the commencement of the long summer day of the arctic people.

It is noticeable that the starting point of the month of Sravana of the Malabarian calendar is almost the same as that of the corresponding months of the ancient Egyptians. Babylonians and the Arabs. It is, therefore, very probable that all these nations originally belonged to the same tribe of the Arctic Race, though they were divided in their religious beliefs, as appears from the fact that the Egyptians started their signs from the summer solstitial point at the time, which was the highest point of the visible zodiac. They were evidently, believers in the Devas; while the other branches started their signs from the sidereal point at the commencement of the invisible part of the zodiac, the supposed home of the Adevas or the invisible spiritual powers.

Now the question arises as to whether the above mentioned schemes of signs and asterisms etc. were designed in connection with the era of the ancient Egyptians or whether there were any similar older schemes. I think that the latter was probably the case. While examining the eras of the ancient nations, I have noticed that some of them at least, including the era of the Egyptians, were connected with certain stars of Draco or the Dragon which are situated not far from the pole of the ecliptic. I am almost certain that this constellation was purposely designed by the arctic people; because the star's situation close to this pole used to point out to these people, at some time or other, the position of the midnight sun in the arctic region or the starting point of the northern course of the sun. This seems, therefore, to have been the earliest constellation designed by the arctic people. It was figured as a Dragon because it represented in the invisible world the powers of darkness, of which the usual emblem was a serpent, according to their notion. In this connection the Hindu legend of Nahusha, the king of heavens, who was turned into a dragon when vanquished by Indra, the power of light, and of the Biblical Satan who enticed Eve in the form of a serpent, are noteworthy.

The arctic people were divided into three sects according to their religious beliefs, *viz.*, Aryas or the Deva-worshippers, Asura-worshippers, and the Naga or Krishna or the Kala (god of death)-worshippers. The first of these started their calendar in connection with the first sunrise of the long arctic night. the second from commencement of the long day and the

third at about the beginning of the long night. The Egyptian lunar calendar belonged to the first kind and it appears, therefore, that they were originally Deva-worshippers.

As regards the probable time of the immigration of this tribe from their original arctic abode, there is no clear evidence available, excepting the one already discussed and no era of Deluge of this nation has come down to the present time as far as I know.

It appears, however, that in course of their immigration, the arctic forefathers of this race passed through India, as is evident from the following facts:—

1. The Hindus believe that the departed souls have to cross a large river (Vaitarani) on their way to Paradise. Among the ancient Egyptians funeral boats used to be buried along with the dead in order to assist them in crossing the waters surrounding their future abode. The ancestral worship was practised amongst the ancient Egyptians and rites were performed for the benefit of the dead, as is also the case amongst the Hindus.

2. The Egyptians used to have a tuft of hair on the crown, called Sheshayah, like the *sikha* of the Hindus. The Egyptians, like the Hindus, had a great reverence for cows.

3. Snake-worship was prevalent among the ancient Egyptians, as is the case with the Hindus. The Egyptians also used to bear the emblem of a serpent on their head-dress.

4. The Egyptian name of the star Canopus meant a 'water-jar'. Similarly, the Hindus called it *Kumbhaja* or 'the one born of a water-jar'. The Egyptians, like the Hindus, did not dine with aliens.

5. The monthly, half-monthly, and the six seasonal rites were observed by the ancient Egyptians, as is the practice among the Hindus as well. The Hindu four monthly ceremonies were also performed by the ancient Egyptians.

6. The Egyptians used to worship the sun in the morning, the evening and at midday; and the Hindus also offer their *Sandhya* prayers at the same hours of the day.

7. The use of onions as an article of food was prohibited in both the nations.

8. A tortoise-headed god, like the Hindu Kurma, and a man-headed lion, like Nrisinha, were worshipped by the ancient Egyptians.

9. Among the Egyptian divinities of the underworld there was a recorder of judgements like Chitragupta of the Hindus. (This fact suggests the idea that the Indian Kayasthas, who claim their descent from Chitragupta, are perhaps the modern relics of the ancient Egyptian immigrants into India).

10. The phonetic resemblance of many Egyptian words with those of Sanskrit is noticeable, e.g.,

with Nut (abyss) compare the Sanskrit *nishtya*,
,, Isis (down) ,, ,, *ushas*,
,, Homo or Har (sun-god) compare *hara*,
,, Mat (goddess or mother) ,, *mata* or *matri*,
,, Naj or Naja (serpent) ,, *naga*,

There is much speculation among modern scholars as to the origin of the word Nile, which is the name of a sacred and important river of Egypt. It is probable that the word be of Indian origin, being derived from *nila*. *Nila* means 'blue' and the sacred Ganges at Hardwar is also called *Niladhara* or the blue stream.

The Cycles of the Egyptian Era.

PARSI ERA.

When the sidereal point 176.241 degree which had coincided with a full moon at the beginning of the Egyptian era became the autumnal equinoctial point, the arctic forefathers of the Parsi branch of the Egyptian tribe started their era owing probably to a schism among the arctic people on some religious ground. The year of this era has not come down to the present time, but the year of its second cycle was preserved by the ancient Parsis, which was started when there was a change of 90 degrees in the position of the zodiac. Assuming that the scheme of the lunar calendar current in the beginning of the second cycle was the same as at the commencement of the era, the starting point of the lunar calendar of this nation was the full moon which coincided with the sidereal point 241.849 degree.

The long arctic night used to begin at the commencement of the era when the sun reached the sidereal point 216.241 degree, this point coincides with the Hindu festival held in honour of Yama the god of death on the second day of the Hindu month of Kartik. According to the parsi lunar calendar the conjunction of the sun and the moon coincided with the point 216·564 degree and there is therefore a negligible difference between the two figures. The Vedic Yama was one of the principal divinities of the parsis who called him Yima. According to a belief of the ancient Egyptians, their dying sun-god Osiris was nursed at his death bed by his sister the goddess of Twilight preceding the long night. This belief I think originated at the beginning of this era. The Hindus, however believe that god yama was the guest of his sister on the afore-said lunar day. This belief I think originated at the time when there was a change of 100 degrees in the position of the zodiac and this lunar day began to coincide with the first rising of the sun and when the sun-god was supposed to be the guest of his other sister or the dawn. It is noticeable that, when this sidereal point changed its position by 90 degrees on account of the precession of equinoxes, the ancient Iranians designed a new constellation called the "Asses." (of yama's car) at the point of the commencement of the long arctic night of the second cycle. This era began when the star of Dragon the longititude of which was 266$\frac{2}{3}\frac{3}{0}$ degrees in 1913 A.D. used to point out at that time to the arctic people the starting point of the northern course of the sun. This supreme invisible god called Ahura Mazada was represented in the visible heaven by this Constellation.

The six seasonal calendars called Gahambers were instituted at the beginning of this era. One of them used to be held at about the beginning of the lunar calendar, at the commencement of the era, but subsequently these rites were performed according to the tropical calendar of the Parsis beginning from the sun's first up-rising after long night. It is noticeable that the ninth month of the tropical calendar was once the last month according to the belief of the Parsis, but in fact it was the last month of their lunar calendar. This branch of the Egyptian tribe was divided into two sects, the one called Aryas used to worship Devas or the powers of light, while the other called Naryas worshipped the (the Nairs of Madras probably belong to this sect) invisible beings, the supposed powers of darkness. The Prophet of the present Parsi nation belonged to the latter sect and he converted the people of Persia who had been the Deva worshippers to his faith as appears from their confession of faith. The Aryan sect used evidently the tropical calendar beginning from the sun's first uprise while the other implied the lunar calendar described above which started 25 solar days later than the commencement of the long arctic night.

The Parsi branch of the Egyptian tribe designed a new scheme of Nakshataras numbering 28 which started from the middle of the Egyptian Nakshatara corresponding to Mula. This is evidently the scheme which is mentioned in the Atharva-Veda. This Veda was once the sacred book of the Parsis according to the view of some modern scholars.*

* There was a difference of 2½ lunar months between the Parsi and the Vedic calendars, and it is therefore quite possible that the Parsis belonged to the A deva branch of the Vedic tribe and not to the Egyptian tribe as stated by me.

The second cycle of the Parsis began, according to some Indian almanacs, in 17970 B.C. when the equinoctial point was situated at a distance of 266.237 degree from the same point of 1913 A.D. The first rising of the sun after the long night used to occur at 226.237 degree and a conjunction of the sun and the moon took place at 216.564 degree or about ten degrees prior to the sun's rising point at the commencement of this era. The latter coincides with the second lunar day of the bright half of the month of Kartika, as already stated, according to solar reckoning. It is believed by the Hindus that god Yama was the guest of his sister on this day.

The tropical calendar of the Parsis begins ten days after the commencement of one of their Gahambers. It appears, therefore, that this festival of the Parsis used to begin at the commencement of this era on the aforesaid day *i.e*, ten days prior to the sun's uprise, which preceded the spring equinox by 40 solar days. Thus the first Gahamber used to coincide with the spring equinox, the second was observed 60 days later, while the third occurred at about the end of the long summer day. The fourth was held one lunar month after this day and the fifth a lunar month after the beginning of the long night and the sixth at the end of the lunar calendar. The long arctic night used to commence at 126:237 degree or three solar months before the beginning of the lunar calendar of the Parsis in an adjusted year and a hundred solar days earlier than the starting point of their tropical calendar or the first uprise of the sun. At about the point of the long night's commencement, there were situated two stars in the heaven which are

called "The Asses". It is noticeable that, according to the Rigveda, the car of Yama was drawn by two asses. It appears, therefore, that the sun-god Yama was supposed to leave the animals of his car at the aforesaid point before going to the dark region, where he used to remain invisible to the arctic people. It is evident from these facts that the Parsi tribe of the Arctic Race used three kinds of calendars, *viz*, tropical, sidereal and lunar.

The starting point of their lunar calendar shows that the first conjunction of the sun and the moon used to occur after the long night on the nineteenth solar day of the first month of their tropical calendar.

According to the Hindus, the religious rites for deceased persons are observed on every day of the conjunction of the sun and the moon. This was apparently the reason that the Parsis fixed the nineteenth day of every tropical month for such ceremonies. This date of the ninth month used to precede the commencement of the long arctic night by one day. It was evidently due to this fact that the Parsis consider this date as the special one for the performance of these rites. Rites for deceased persons whose dates of death are not known, are performed on this day.

This rite for the deceased persons, and the seasonal calendars called Gahambers, gave me the clue to the nature of the original Parsi calendar, which has undergone changes in the course of time. According to the Parsi scriptures, the ancients once lived in a country where the summer season lasted only for two months

which was evidently the period of the long arctic day. The long night in that country used to last for two tropical months.

In the circumstances stated above, it is evident that, subsequent to this era, some of the arctic tribes, including the Parsis, must have immigrated from their original home to that part of the arctic region where the long summer day used to last for two months.

KAURAVAS.

When the position of the zodiac in 25653 B. C. underwent a change of about 10 degrees owing to the precession of equinoxes and the Egyptian sign of Ram reached the circumpolar part of the zodiac, the Kaurava branch of the Egyptian tribe started their era. The starting point of their lunar calendar was 32.495 degree as appears from the era of the king Yudhishtara of India who was a Kaurava and who started his era in 2448 B.C. from the aforesaid point in commemoration of his victory in the great war of Mahabharta. The first rising of the sun after the long arctic night at the beginning of the Kaurava's era coincided with a lunar day called Bhishm-Dwadashi Bhishm was the name of a warrior of great strength and skill who was the commander-in-chief of the troops of Yudhistara's enemies. I think he was given this appellation after the Kaurava's arctic sun-god of that name who was supposed to emerge from darkness after vanquishing the demons of the long night.

Kauravas belonged to one of the five tribes mentioned in the theological works of the Hindus including the Vedas. It appears therefore that the Egyptian tribe of the arctic race was divided into five branches including Kauravas.—

MATASYAS AND NAG S.

When the position of the zodiac at the beginning of the Egyptian era under-went a change of $13\frac{1}{3}$ degrees or one nakshatra of the scheme of 27 asterisms the branch of the Egyptian tribe called Matsya started its era. Matsyas believed that the circumpolar part of the arctic zodiac was a celestial ocean where in the celestial marine animals abounded. The Hindu bathing festival called Ganga Dasahara coincided with the summer solstice at the beginning of their era and it was therefore of the Matsya origin. The constellation of Orion was designed by these people as appears from the fact that one of its most brilliant stars marked at the time the summer solstitial point. When there was a change of 50 degrees in the position of the zodiac and the full moon of Margshira became the sun's first rising point the constellation of the fishes called Pisces was designed by these people. The star Alpha-Piscium of this constellation almost marked the summer solstitial point. This star, according to the figure of the constellation, is situated at the point where the tails of the fishes are figured as tied together. It appears, therefore, that the heads of these two fishes marked the beginning and the end

of the circumpolar part of the zodiac which is described as a billowy luminous ocean in the Rigveda. The tied tails of the two fishes thus indicated the juncture of the northern and the southern courses of the sun.

The long day then used to end at the sidereal point which coincided with the great bathing festival of *Ganga-dasahara*, already referred to, and which was situated in the constellation called Orion, a representation of the god Siva of the Hindus. According to a Hindu belief the celestial Ganges used formerly to lie in the folds of the braided hair (circumpolar heaven) of Rudra until she was released by this god, and thereupon she fell downward. There is a constellation called Eridanus, or the river, which was figured in the heavens by the ancients, evidently in connection with the above tradition.

When the ancients immigrated southward and the long day consequently disappeared, they assumed that the standing waters of the circumpolar region flowed downward in the form of a celestial river, called Eridanus or the Ganges.

These people were called Matsyas evidently because their calendar commenced with the constellation of the fishes and the month of Chaitra. They were worshippers of Devas or the powers of light who were supposed to voyage on the celestial sea or the visible part of the zodiac which according to the vedas consisted of the smooth and the billowy ocean. The supposed celestial fishes of this sea were therefore

adopted by these people as the emblem of Devas. It is noticeable that the starting point of their lunar calendar 26·328 degree was a sign of 20 degrees of the Parsis and that the latter had a legend about the descent of the celestial waters. This shows that there was some connection between these two nations.

According to Hindu theological works on religious rites,[1] called Grahya Sutras, nagas or serpents were worshipped on the full moons of Sravan and the three following full moons. The last ceremony was observed on the full moon of Margshira which was the sun's first rising point at the beginning of the second cycle of the Matsyas' era. It appears therefore that a sect of the Matsya branch of the arctic race called Nagas believed in the superiority of Adevas or the invisible powers who were supposed to cause the long night. They believed that the abode of these invisible powers was under-neath the ground or the *Patal* which lay beyond their horizon. This is evidently the reason that Vritra the head of these powers was represented as a serpent in the Vedas. They adopted the lunar calendar called Kali (darkness) calendar. The arctic people who believed in the superiority of the invisible powers were divided into two sects called Nagas and Vaishanavas. The latter worshipped either the invisible sun-god or the powers controlling it and called them by several names including Krishna or the black one and therefore they were sub-divided into many sections. When there was a change of 10 degrees in the position of the zodiac and the southern course of the sun used to begin at the sidereal point 69·398, another sect which

believed in the invisible powers started its era. When there was a further change of 90 degrees in the position of the zodiac, the second cycle of this era began.

The long night then coincided with the long sleep of Vishnu on a huge serpent called Shesh-naga. The winter solstice then coincided with a Manvadi day on which a fast called Hartalika is observed, and which is also the birth anniversary of Varah. The winter solstitial point was then situated at the conjunction of the two nakshatras called Purva and Uttara Phalguni which were designed in the form of trees at the time in lieu of the former celestial tree, the root of which was Mula nakshatra.

The summer solstitial point at the beginning of this cycle almost coincided with the star of Aquarius, the longitude of which was $339\frac{11}{60}$ degrees in 1913 A. D. This constellation was associated by the Babylonians with the Great Deluge and it was represented, in the zodiacal symbolism by god Ramman crowned with a tiara and pouring down water from a vase.

This vase is also referred to in the Rigveda V-85-3, wherein Sovereign Varuna is described as pouring down water on earth, *as showers of rain bedew the barley*. The portion in italics is noteworthy, because it suggests that the water from the vase could not have been the ordinary rain water but the celestial water of the circumpolar part of the zodiac. In Atharvaveda X-8-1 & 14 also, Varuna, the water-bearer, is alluded to as holding aloft the waters with a full vase.

The two references, given here are representative of two different periods. In the arctic region, Varuna was supposed to hold aloft the circumpolar part of the zodiac, herein called vase; while the latter's disappearance, owing to the southward movement of the arctic people, is represented by the Rigvedic verse. Here it may also be noted that the Greek name of this constellation meant 'water-bearer'.

The last cycle of the Kali era began in 3101 B. C. when the spring equinoctial point was situated at a distance of 69·398 degree from the same point of 1913 A. D., while a conjunction of the sun and the moon ended at 11·775 degrees which was the starting point of this calendar.

The starting point of the month of Chaitra, according to the author of Surya-siddhanta, whoever he might have been, was 20·842 degrees as against 11·775 of the Kali era; but he had assumed that there was no difference between the two. This mis-conception on his part caused a slight error in the length of the Hindu sidereal year and the subsequent astronomers, who adopted the Kali era as the basis of their work, were obliged to change the starting point of the Hindu sidereal sphere from time to time.

Kamboja branch of the Vaishanava sect.

When the summer solstitial point receded to 84·539 degree the full moon of Jeysth (a Manwadi day.) another era was started by a tribe of the arctic

race. The long night coincided with a lunar day which is associated with Narak or Hell. The second cycle of this era was started when a change of 80 degrees took place in the position of the zodiac. The end of the long summer day then coincided with the birth anniversary of Narasinha (man-lion) who was supposed to have saved Prahlad (Moon) from the power of long day which was consequently called Hiranyaksha or the golden eyed. The long night then used to coincide with the fast of Narsinha which is still observed by the Hindus. When there was a further change of 20 degrees in the position of the zodiac and the point of the long night of the original era became the first rising point of the sun, another festmel called Hanuman Jayanti or birth of Hanuman was also started on this day. A monster Monkey who was a friend as well as a rival of God Indra formed the subject-matter of a hymn in the Vedas. The statues of Narsinha have been found in Egypt and Combodia and it is very probable that the monster statues in the Island of the Pacific, which has been recently sub-merged in the ocean were probably of the monster gods of this nation. The name Combodia suggests the idea that these people were called Kambojas (present kamboh) by the ancient Hindus.

The sect of the Kambojas who believed in the superiority of the invisible powers called Adevas or the powers of darkness designed at the beginning of the Kambojas' era the calendar called Kali. It then used to begin from the Hindu month of Magh after a conjunction of the sun and the moon at the sidereal point 313·564 degree. As the sun's first rising point

was 314·539 degree the calendar began a lunar day earlier. The first appearance of the phenomenon of night after a long summer day used to occur at about the point 134·539. It was supposed as the birth anniversary of Takshak one of the chiefs of celestial serpents and, according to some works, it was the birth day of Kalki an incarnation of Vishnu. When the point 154·539 coincided with the winter solstitial point, the arctic people using Kali calendar left the part of the arctic region where the phenomenon of the long night used to occur as appears from the fact that the lunar day coinciding with the point was supposed to be the birth anniversary of Kali, which was the name of the invisible power causing darkness.

Babylonian Branch of the Egyptian Tribe.

When there was a change of 80 degrees in the position of the zodiac as compared with that in 25653 B. C. the Babylonian branch started its era. The southern course of the sun then used to begin from the star known as Delta-Piscium, the longitude of which was 12·934 in 1913 A. D. The fore-fathers of the ancient Babylonians made a slight change of 0·238 degree in the schemes of the signs and asterisms owing to the position of the aforesaid star. The long night then coincided with the full moon of Shravan according to the Kali calendar, and the festival of Rakshabandhan or the safety amulet was instituted on this day and it is still celebrated by the Hindus. Apparently the arctic priests used to

perform some ceremonies for the safety of the people during the long arctic night. The first Muslim month called Muharram used to begin at the time 10 solar days earlier than the commencement of the long night, the date of the supposed sun's death and it is a strange coincidence that the grand-son of the Muslims' prophet from daughter's side was killed on this day i.e. the tenth of Muharram. I have not been able to find out the ancient era of the Babylonians, but their great monarch, Nebuchadnezzar started his era on Wednesday the 26th February 747 B.C., when the sun was at the sidereal point which was situated at about 13 degrees from the spring equinoctial point of 1913 A. D This nation used the scheme of 30 nakshatras of 12 degrees each according to a western scholar.

Malabarian and Arabian branches of the Egyptian tribe.

When the position of the zodiac in 25653 B. C. under-went a change of about 100 degrees and the formerly hidden part of it became visible, the Malabarian and the Arabian branches started their era. The southern course of the sun used to begin at the time from the point 352·234 degree. The fore fathers of these nations were then living in that part of the arctic region where the long night used to last for 80 solar days. The constellation called Pegasus or the winged sea-horse was evidently designed by

these people as the solstitial colure* passed at the time through this constellation. The long night then used to coincide with the Hindu festival of Nagpanchmi on which day the serpents are still worshipped by the Hindus. Both these nations started their lunar calendars from the beginning of that night and evidently they were worshippers of Adevas or the invisible beings. I think both of these nations originally belonged to one and the same branch of the Egyptian tribe of the arctic race. The Arabs of the pre-muslim period used to adjust their lunar calendar periodically as is the practice amongst the Hindus I have therefore drawn my conclusion from the first year of the muslim eras. When the starting point of the aforesaid long night became the commencement of the southern course of the sun, the last era of the Malabaris called Parasuram era was started in 1176 B. C.

The vernal equinoctial point at the time was situated at a distance of 42·934 degrees from the same point of 1913 A. D.; while a conjunction of the sun and the moon occured at 133·177 degree. The latter was the starting point of the sidereal lunar calendar of the Malabarians whose first month was Sravana which used to commence at about the beginning of the sign of Lion. This month in the Kali calendar commenced at 128·199 degree, and there

*Solstitial colure is an imaginary circle passing through the poles of the two solstitial points (the northern most and the southern-most points of the zodiac) while the equinoctial circle passes throuh equinoctial points The sun coincides with these solstitial and equinoctial points on or about the 24th June and 24th December. and on 22nd March and 22nd September respectively.

was thus, a difference of about five degrees between the starting points of these two calendars. It is noticeable that the former began from Nagpanchami on which day serpents are worshipped.

It is stated in Hindu almanacs that there was a contact of serpent's poison on this day. Evidently this statement was based on the old belief that the arctic sun used to die of serpent's poison at the beginning of the long night.

The difference between the lunar calendar of the Malabarians and that of the Arabs was nominal, since the latter used to reckon their months from a new moon instead of from a conjunction of the sun and the moon. The change was probably made by the prophet of Islam for the sake of public convenience.

At the beginning of the Malabarian era, the vernal equinoctial point coincided with the commencement of the sign of the bull and it is evident, therefore, that the statement in Narapati-jaya-charya, a work on primitive astrology, that the Bull was the first sign beginning from due east, referred to this period. Several astrological tables were designed at this time and it appears therefrom that Krittika was the first nakshatra and that the week-days were known to the Hindus at that time.

In one of these tables, nearly all the alphabets are noted against 112 parts of twenty-eight nakshatras beginning with Krittika. At first five vowels, *viz.*, a (अ), i (इ), u (उ), e (ए) and o (ओ) are given; there-

after nineteen consonants with five inflections each and twelve consonants without inflections are noted. The latter, in groups of three each, are placed under four nakshatras, *viz.*, Ardra, Hasta, Purvashadha and Uttarabhadrapada, which are situated at a distance of seven nakshatras from one another. The latter fact suggests the idea that some older table, beginning with Ardra was revised at this time. The first vowel and the first four consonants shown in this table were a (अ), b (ब), c or k (क), h (ह), and d (ड). The first five Arabic letters corresponded to a (अ), b (ब), j or g (ज). d (द), and h (ह). The first four letters of the Greek alphabets were called Alpha (अ), Beta (ब), Gamma (ग or ज), and Deltá (ड).

It is noticeable that the ancient Arabs who had the scheme of 28 nakshatras used also as many alphabets. This may lead to the inference that the above table, which is based on 28 nakshatras, was originally designed by the arctic tribe of the Arabs and that the additional alphabets and inflections etc., were later inventions or were borrowed from the *Nagari* characters of the Naga people. The compound name *Devanagari* justifies this inference and shows that the writing so called contained letters of the Devas as well as of the Nagas. This table further indicates that till the time of its design, the Arctic Race had not come in contact with the aboriginal Arabs, who had their own peculiar sounds.

Leaving the inflections aside, the number of alphabets in the above combined table is 36; and it may be inferred that the combiners of the Deva and

the Nagari characters should have been using the scheme of 36 nakshatras before they adopted the scheme of twenty-eight.

With regard to the above table, it is noticeable that there was almost a regular similitude in the order of the first four or five sounds of the various nations. Along with this fact, it may also be noted that the five vowels of this table correspond to those of the Roman alphabet. In such circumstances, it will not be presumptuous to suppose that these alphabets had probably a common origin. The presumption is justified, considering that the aforesaid table dates 1176 B. C., while the art of writing was already prevalent amongst ancient people so far earlier as 4000 B. C., as the Cuneiform inscriptions of Behistun and other places will show.

The above facts lead me to the conclusion that the arctic people in course of their immigration, first passed through China, which they called the country of the Nagas or the dark country, as it lay beyond their original horizon. From them they borrowed some of their peculiar nasal sounds. Thence some of these people proceeded to the country of the aboriginal Semitic Race where they adopted their language, peculiarised by strange gutteral sounds. Some of them, however, increased the number of their sounds; while others, like the Arabs, preserved the original number but revised the alphabets deleting some of the vowels.

The Vedic tribe of the Arctic Race.

It is supposed that the Dhanishthadi calendar, or the one beginning from the Dhanishtha Nakshatra, was the calendar of the Vedic people, because it is treated in the ancient book called Jyotisha-vedanga, which is considered as a part of the Vedic literature. The era of this calendar has not come down to the present times; but it consisted of five years' minor cycles, containing two additional lunar months.

Modern scholars consider this work as of a very rough nature because there cannot be two complete additional lunar months in a period of five tropical years. This calendar was, however, based on the Jupiter's synodical motion, as sixty Jupiter's synodical years were almost equal to sixty-five tropical years or sixty-seven lunar years. This major cycle of sixty Jupiter's years was subdivided into twelve minor cycles of five Jupiter's years each. The rate of the precession of equinoxes (54 seconds a year), given in the Surya-siddhanta was also based on a Jupiter's year. I have found by calculation that this rate was quite correct in 3101 B. C. when the last Kali era commenced.

According to Varaha-mihira, one of the five year cycles of the Dhanishthadi era commenced in the Saka year 2 or 80 A. D., and its first month was Magha. The sun's position at the beginning of this month was at the sidereal point 314·461 degree when it was in conjunction with the moon. The

Vedic lunar calendar is connected with the conjunction of the sun and the moon which coincided in the third year of the Egyptian era or 25651 B. C. with the sidereal point 314·859 degree and which used to occur about 8 days earlier than the first rising of the sun. This is one of the seven lunar days which are called Kalpadi because they were connected with the Kalpa or the creation era. The difference between this figure and that of Vahara Mihira is a slight one; if the long period which intervened between the beginning of the era and Vahara-Mihira's time is taken into consideration it is negligible. More-over the starting point of the calendar was possibly made to agree with the commencement of the Dhanishtha nakshatra, at some future period. The point was 314·696 degree at the beginning of the Egyptian era but might have under gone some slight alterations in course of time owing to the proper motion of the principal star of this asterism. The original number of nakshatras was 30 but it appears from Jyotisha-Vedanga that it was reduced to 27 by the author of this work or at some earlier period.

The Vedic people divided the solar year into six parts called Ritus and sub-divided every part into the periods which were equal to signs and half signs of 30 and 15 degrees respectively and these periods were called Artavas. This division was evidently done for adjusting periodically the lunar calendar to the solar one because 369 lunar months were equal to 30 solar years less the sun's passage in one Ritu or 358 solar months. The Jupiter's cycle mentioned above of 60 years I think used to be adjusted on

this basis by omitting a lunar month or half a month periodically. The Vedic people divided the solar year into 45 periods called Ashtakas of 8 solar days each.

The hidden part of the zodiac at the beginning of the Egyptain era used to begin from the sign of the Scorpion which, according to Hindu astrological works was once figured as a serpent. When it became visible, it was renamed Scorpion in order to distinguish it from the new constellation Hydra, then lying below the horizon, hence invisible. The constellation Pegasus, which covered the summer solstitial point, was designed at this time and its principal star Alpha Pegasi marked almost the aforesaid point.

The ancients, thus, started their meridian from a place where the long night used to last for 80 days. I am unable to say whether this change in the meridian was made owing to the ancients' southward movement or to some other cause. The visible part of the zodiac consisted of 280 degrees and the sun's passage therein was equal to eight months of 35 solar days each, the first month beginning from sunrise after the long night. The point of sunrise almost coincided with the beginning of a lunar fortnight, and so was the case with the starting point of the Dhanishtha nakshatra. Thus, the sun, after its rise, used to reach the said asterism in three lunar months and a half.

The celestial tree Asvattha, the root of which was the Mula (root) nakshatra at the beginning of the Egyptian era, was replaced by the Arjunis or the Fal-

gunis at the beginning of this new Kalpa, or the period when the new nakshatras, signs, calendars, meridian etc. were created in place of the old ones.

The three main religious sects of the arctic people designed their calendars beginning with the sun's first rising point, the long day and the long night. The Vedic people and the Babylonians, who belonged to the Asura sect, began their calendars from Dhanishtha nakshatra. The former used the scheme of 28 nakshatras beginning from the commencement of the sun's southern course, and the starting point of their Dhanishtha was consequently 314·363 degree. The latter, however, adopted the scheme consisting of 30 asterisms and their Dhanishtha nakshatra commenced from 312·934 degrees.

The sect worshipping *nagas* started their calendar from the beginning of the long night which coincided with 132·934 degrees. The old calendars and signs of the Babylonians and the Nagas used to commence from the sidereal points which were situated at 312 674 and 228·574 degree respectively.

The last Dhanishthadi era began in 1285 B. C. when the northern course of the sun used to begin with the starting point of the aforesaid asterism (Dhanishtha).

The Samaritan Tribe of the Arctic Race.

The Samaritan lunar calendar was connected with the conjunction of the sun and the moon which coin-

cided in the third year of the Egyptain era or 25,651 B. C., with the sidereal point 42·177 degree and which used to occur at about the beginning of the long day. This is one of the seven lunar days which are called Kalpadi, because they were connected with the Kalpa or the creation era. The full moon of the Samaritan's second month which then coincided with the point 85·835 degree used to occur about seven solar days before the summer solstice (24th June). When this point became the point of commencement of the southern course of the sun, the Samaritan branch of the Arctic Race started its first creation era.

At the beginning of this era the long night used to commence at the sidereal point (215·838) which was situated at a distance of 130 degrees from the beginning of the southern course of the sun or of 40 degrees from the autumnal equinoctial point at the time. The great Hindu festival of Dewali coincides with the sidereal point which was situated at a distance of 215·517 degrees from the vernal equinoctial point of 1913 A. D. and it shows a very insignificant difference as compared with the starting point of the aforesaid long night. This festival seems to be of Samaritan origin. The general illuminations on this day appear to be a relic of the arctic necessity of lighting during the long night.

When there was a change of 80 degrees in the position of the zodiac the Samaritans started the second cycle of their era. The birth anniversary of the Tortoise incarnation coincided at the time with the close of the long summer day. This incarnation of

Vishnu is supposed to have held up the heaven or the circumpolar part of the zodiac. When there was a further change of 10 degrees in the position of the zodiac the Samaritans started the third cycle of their era. The sun's first rising point then used to coincide with the lunar day which is held sacred by the Hindus in connection with the supposed rising of Devas or the powers of light from their long sleep. The constellation ursa-major (or the Saptarishis of the Hindus) was designed by this tribe at the beginning of the third cycle, when a star of this asterism the longitude of which was 175·067 degree in 1913 A. D. pointed out in the arctic reigion the invisible winter solstitial point to the arctic people. When the position of the zodiac at the commencement of the Samaritan's era under-went a change of 100 degrees and the entire hidden part of it became visible the fourth cycle was started by this nation. The first rise of the sun after the long night took place at the time on the day following Dipmalika or Dewali (sidereal point 215·517 degree) and this day is associated with the worship of God Vishnu. The last cycle of the Samaritans' era of creation began in 4305 B. C. when the vernal equinoctial point was situated at a distance of 85·835 degrees from the same point of 1913 A. D. and the conjunction of the sun and the moon occured at 225·174 degree in that year.

The Samaritans had also an era which was called the era of the great Deluge. I have already explained as to what was really meant by such eras, which, in fact refer to the years in which the various tribes of the Arctic Race left the arctic region and when the

phenomenon of the long day ceased to exist. The deluge era of the Samaritans began in 2998 B C. when the vernal equinoctial point was situated at a distance of 67·988 degrees from the same point of 1913 A D; while the conjunction of the sun and the moon took place in that year at 12·543 degree.

The well-known Hindu fast of three days in honour of Savitri, who saved her husband from the clutches of the death-god Yama coincides with the sidereal point which marked the vernal equinoctial point at the beginning of this era. This fast is observed when the sun is in the Rohini nakshatra, the principal star of which is Alpha Tauri. Its longitude in 1913 A.D was 68·566 degree This nakshatra is mentioned in the Atharvaveda XIII-I-22 and 23 as the consort of Rohita, the Red One (Sun), as well as his seat.

The word *rohini* (from *ruh* to ascend) generally means a 'red cow or mare' It appears, therefore, that this nakshatra was so named, because the sun used to ascend upward from that asterism. The particular hymns about Rohita and Rohini in the Atharvaveda were connected with the emigration of the ancients of the arctic region, when they discovered, in consequence thereof, the starting point of the northern course of the sun, which used to begin then from the Rohini nakshatra. In that case, the deluge era of the Samaritans is the second one and their actual emigration must have taken place about 6500 years earlier, or the period in which there was a change of 90 degrees in the position of the zodiac, on account of the precession of equinoxes.

It also appears that the forefathers of the Samaritans used to live at the time in that part of the arctic region where the long night used to last for three days. When this phenomenon disappeared owing to the southward movement of the ancients they attributed it to the efforts of Savitri, the supposed wife (dawn) of the mortal sun-god, who, according to their belief, used to die at the beginning of the long night. These three days were called Trikadrukas (or the days of the mother of serpents) in the Vedas. In this connection the Biblical account of the resurrection of Christ three days after his death is noticeable.

The chaldean tribe of the Arctic Race.

The chaldean lunar calendar was connected with the conjunction of the sun and the moon which coincided in the third year of the Egyptian era or 25651 B. C. with the sidereal point 183·883 degree and which was the day following the autumnal equinox at the time. This is one of the seven Kalpadi days which were connected with the ancient creation eras.

I am not aware of any chaldean era or a cycle that has come down to the present time and my following description of this nation is based on the assumption that the Muslim festival of Idul-zuha, which was introduced among the Arabs by their prophet Abraham, is of the chaldean origin as the prophet belonged to this race.

The arctic forefathers of this nation started their first creation era when the afore-said point (183·883

degree) became the beginning of the long winter night. The southern course of the sun then used to commence from 53·883 degree. The eleventh lunar day of the bright half of the Hindu month of Paus which is a Manwadi day or the one connected with a progenator of a tribe of the Arctic Race was apparently associated with the era of this nation. It coincided with the sun's first rising day at the beginning of the chaldeans' era When there was a change of 80 degrees in the position of the zodiac and this day used to occur at about the beginning of the long summer day the chaldeans started the second cycle of their era. The Muslim festival of Idul-zuha then coincided with the commencement of the long arctic night. The sacrifice of animals on this day used to be made at the altar of god to procure favour for the reappearance of the sun. It appears from the Muslim and Hebrew traditions that a human being was originally sacrificed on this day as was the case among the ancient Mexicans but this practice was abandoned by the former nations on their emigration from their arctic abode.

Roman tribe of the Arctic Race.

The Roman lunar calendar was connected with the conjunction of the sun and the moon at the point 221·120 degree which coincided in the ninth year of the Egyptain era or in 25645. B. C. The day of the conjunction is a Kalpadi day or the one connected with a creation era. This day used to occur at the time about 1½ days before the beginning of the

long arctic night. According to the lunar calendar which was current in the year of the last Roman era, there was a conjunction of the sun and the moon at about the aforesaid point (221·120) which was the beginning of Vishakha nakshatra of the scheme of 28 asterisms. The starting point of their sidereal and tropical calendar was 337·542 degree and the difference between these two points was equal to the sun's passage in four lunar months. It appears therefore that the Arctic Romans started their sidereal and tropical calendar 15 solar days later than the first rising of the sun after the long night and their lunar calendar from nearly the beginning of that night and from Vishakha nakshatra. The Sanskrit name of asterism which means 'the one that has separate branches' appears to be of the Roman origin as a part of it lay at the time in the visible part of the zodiac and the other part beyond the horizon. This is the reason that the present tropical calendar of the Romans does not start either from the solstices or the equinoxes nor its months start from the tropical signs. There were also some other peculiarities in the Romans' ancient calendar which are discussed below. Their tropical calendar consisted originally of ten months beginning with March, as mentioned in Encyclopaedia Britannica, and that January and February were added subsequently—the former at the beginning and the latter at the end of the year. The calendar was, however, again revised by placing February between January and March.

The Romans had another practice of reckoning dates. They divided their months into three parts

called Calends, Nonae and Ides (which fell at about the middle of the month), and called the dates following the Ides as so many days preceding the Calendi of the next month.

I think, the Romans belonged to the arctic tribe which is described in the Rigveda as Dasagvas who used to perform ten months' worship. According to the Arthashastra of Chanakya, a month of 35 days was once current in India. I may point out here that thirteen revolutions of the moon are equal to the sun's passage in 350 degrees. The English names of the last four months of the present Roman calendar end with the suffix 'ber' and they indicate that they sometime occupied the seventh, eighth, ninth and the tenth place in the order of months Moreover, their affinity with the Sanskrit ordinals *saptama*, *ashtama*, *navama* and *dasama* is exceedingly remarkable and shows a common origin. The suffix 'ber' is a corruption of the Latin 'Vir' which is found in such words as Decemvir.

Their first month of 35 solar days—months, called Virs—coincided originally with the tropical month of March and their sidereal signs of thirty degrees each also commenced from the same point. They began as already stated 15 days after the sun's first rising after the long night. This is the reason that they did not agree either with the equinoxes or with the solstices or with any tropical months commencing from these points.

Probably the solar months of 35 days each were originally divided into four parts, *viz.*, Calends, Nonae,

Ides and Vir; the last one having been apparently rejected when the number of months was increased from ten to twelve. The calends was so called because on this day (the first of every month) holidays used to be proclaimed to the people. This was an old arctic practice. The lunar day of the sun's first rise used to change in every year of the Roman's cycle of 5 years and it was, therefore, considered necessary to proclaim the lunar holidays at the beginning of every solar month.

The cycle was equal to 51 virs and one Ides while 61½ lunar months were equal to a cycle less 10 solar days or a nonae. It appears from the Rigveda that the circumpolar part of the zodiac was the home of the heroes or *viras*, because they were supposed to destroy darkness, when the sun or the moon used to revolve in this region. It is evident therefore that the tropical calendar prior to the creation era consisted of 5 months of 20 solar days each (long-night) four months of 30 solar days each (in two parts of ordinary days) and four viras of 35 solar days (long day and ordinary days of un-usual length at its beginning and at its end). The arctic fore-fathers of the Romans were also divided into two sects. The worshippers of Devas or the powers of light generally used the tropical calendar. They worshipped Janus, the first dawn after the long night. She is alluded to in the Vedas as the mother cow and Janita or the creator. She was represented by the Romans as the two faced goddess having her heads towards the supposed hell and the heaven and the month of January was called after her. At the end of the first quarter of the long

day (first June) they worshipped Juno or imprisoned dawn, while at the end of that long day, they held a festival in honour of Diana the goddess of conquering dawn who was supposed to re-appear after vanquishing her supposed enemies or the powers causing the long night. Their chief god called Jupitor was supposed to rule the bright world like Rudra of the vedas. The other sect who believed in the superiority of the invisible powers chiefly used the lunar calendar which as already stated used to begin at about the beginning of the long arctic night. The beginning of their third month coincided at the commencement of the era with the 8th lunar day of the month of Paus which is held sacred in honour of god Vishnu if it coincides with a Wednesday. It was the end of a week after Christmas at the time. In this connection it is to be noted that Sri Rama and Sri Krishna were also born on Wednesday. It appears therefore that this day of the week was held most sacred by the Vaishnavas. When in the course of time, the sun's first rising day after the long night coincided with the beginning of the fourth lunar month of the Romans at the sidereal point 308·438 degree, the second cycle of this era was started by the ancients. The solar day coincided with a Manwadi lunar day and therefore is held sacred by the Hindus. The southern course of the sun then used to begin from the point 78·438 degree. It is to be noted that when this sidereal point coincided with the spring equinoctial point the Jews started their era in 3761 B. C. At the beginning of the afore-said Roman cycle the autumnal equinox coincided with the birth anniversary of the Dwarf incarnation of Vishnu. When in the course of time the sun's first rising used

to coincide with the point 250·226 degree which was the beginning of a lunar month of the Romans, the anniversary of Sri Krishna used to occur at the beginning of the long arctic night, while the great Hindu festival of Shiva-Ratri and the birth anniversary of Sri Rama used to take place at the beginning and about the middle of the long summer day respectively. It appears therefore that the Panchalas and Scythians, the worshippers of Sri Krishna and Sri Rama respectively, were the off shoots of the Roman branch of Arctic race.

A full moon of the Roman calendar coincided with the point 206·568 degree, while according to the Jewish calendar a full moon occurs at 206·328 degree on which day the Jewish great festival of Tabernacles is held. It is also remarkable that the period intervening between the aforesaid Jewish festival and the full moon of Chaitra month of the Kali calendar, which is also a Manwadi day is equal to six solar months. It is also noticeable that the period intervening between the full moon of Chaitra and the full moon of Phalgun which is also a Manwadi day is 320 solar days. It appears therefore that the ancients were settled at the time when these festivals were instituted in that part of the arctic region where the long night used to last for forty solar days. The conjunction of the sun and the moon called Mahalya then coincided with the summer solstice. It was the last lunar day of the ceremonies in honour of the departed souls among the Hindus.

The last pre-Christian era of the Romans began in 753 B. C. when the vernal equinoctial point was situ-

ated at a distance of 37·079 degrees from the same point of 1913 A. D., while a conjunction of the sun and the moon occurred at 17·380 degree. There was also a similar conjunction on the last day of June in that year. The date of the commencement of the era was, however, April 24, which coincided neither with the vernal equinox nor with a full moon nor with a conjunction of the sun and the moon.

Prajapatya branch of the Arctic Race

The lunar calendar of this tribe was connected with the conjunction of the sun and the moon which coincided in the sixth year of the Egyptian era or in 25648 B. C., with the sidereal point 253·558 degree. It was a Kalpadi day or the one connected with Kalpa or the creation era. The first month of the calendar ended ten solar days after the winter solstice at the time. This tribe used the scheme of 18 signs of 20 degrees each because the sun's passage in 179 such signs was equal to 123 lunar months. They started their tropical calendar of 18 months of 20 solar days each with reference to the equinoxes, while their sidereal and lunar calendars were made to commence at the beginning of their era as already stated from the point 253·558 degree The eleventh lunar month ended at the time at a point which almost coincided with one of their sidereal signs (213·558 degree) and which was then situated at a distance of 9·106 degrees from the point of commencement of the long arctic night. When in the course of time this sign became the beginning of the afore-said long night, the cons-

tellation of Auriga or Prajapati was designed by these people. The first rising of the sun used then to take place at the end of the tenth month of the Jewish calendar which was current at the beginning of their last era in 3761 B. C. It appears that they divided the lunar month of 29·106 solar days into parts of 20 + 9·106 and 10 + 19·106 and started their eras or cycles in such a way that the parts containing the fraction of a degree coincided with one of the equinoctial or solstitial points or one of their lunar months began with one of these points or with one of their signs. According to a legend mentioned in the Hindu theological works called Brahmins, the head of Prajapati was cut off under orders of Pashu-pati or the lord of animals also called Shiva or Rudra; as the former (Prajapati) had fallen in love with his own daughter. The real fact was that dawns never used to appear during the long summer day and they were supposed to be imprisoned by their father Prajapati for some bad intention. It appears therefore that Prajapati ceased to be venerated by these people and they substituted Shiva or Pashu-pati in lieu thereof. The nakshatra called Mrigshira or the head of an animal and the sign of the Bull were designed at about the beginning of this era from the star marking at the time one of the horns of the Bull and the commencement of the southern course of the sun.

Grecian branch of the Prajapatya tribe.

When the position of the zodiac at the beginning of Prajapatya era under-went a charge of a sign of

20 degrees the Grecian branch of this tribe started their era. This era was started when the beginning of the long day used to coincide with the sidereal point which was situated at a distance of 13·468 degrees from the vernal equinoctial point of 1913 A. D. This point coincides with the third lunar day of the bright half of the Hindu month ot Chaitra which, according to one account, is associated with the birth of the Fish incarnation of God Vishnu. This incarnation is alluded to in an old Greek tradition, according to which, the sun-god used to voyage on a boat in the form of a fish and to disembark in that of a dolphin. The long night used to begin then 180 solar days later or at the sidereal point 193·468 degrees which coincides with the Hindu festival of *Maha-ashtami* in the month of Asvina, on which day *Maha-nisa*, or the long night, as well as the goddess Durga, is worshipped. the latter representing the invisible dawn of the long night which is compared to a *durga* or fortress. The first lunar day of this long night was a Manwadi day. The religious ceremonies of the Greeks, called Eleusinian Mysteries, also originated at the same time.

When, in course of time, this Eleusinian festival coincided with the midsummer day, owing to the retrograde movement of the equinoctial points through 230 degrees, the last creation era was started in 5598 B. C. The southern course of the sun then used to begin from 193·390 degrees The forefathers of the ancient Greeks probably left an arctic region at about this time; and at the place where they were living, the long summer day lasted for nine or ten days, as will appear form a change in their from of worship of

the goddess Dawn. Amongst the Hindus the first nine days of the month of Asvina are dedicated to the worship of Sarasvati, and the period is called *nava-ratra*, during which fasts are observed as was also the case among the ancient Greeks. My assumption that the ancients lived in a place where the long summer day lasted for ten solar days is also supported by the Greek tradition according to which. Helios, the sun-god, had 350 cattle (number of ordinary days) instead of the usual 360.

I might mention in connection with the Greek era, that, according to the Greek version of the Old Testament, called Septuagint, the creation era began in 5638 B. C. which vastly differs from the Hebrew accounts, but nearly agrees with the creation era of the Greeks, there being difference of only 10 years. It seems, therefore, very probable that the Greek interpreters of the Old Testament might have been actuated to bring this era as near to their own as possible.

The spring equinoctial point at the beginning of last era was situated at a distance of 103·390 degrees from the same point of 1913 A.D. and a full moon occurred at 233·302 degrees, while, twelve months later, another full moon coincided with the point 222·570 degrees which was the beginning of the hidden part of the zodiac at the commencement of the Egyptian era.

The Mexican branch of the Prajapatya tribe.

The branch of the ancient Mexicans was the only one of the arctic race which preserved a complete

record of their cycles, though some of them were not their own. No information is, however, available as to what was the basis of these cycles. Hindu astronomers also made use of long periods, called *yugas*, for astronomical purposes. The four *yugas* they used were known to the Mexicans, though the Hindu periods differed from those of the Mexicans, as will appear from the following table :—

	Indian	Mexican
Krita Yuga	4800 Divine years	4800 years
Treta ,,	3600 ,, ,,	4010 ,,
Dvapara ,,	2400 ,, ,,	4801 ,,
Kali ,,	1200 ,, ,,	5042 ,,

A divine year is equal to 360 ordinary years. The total number of years of all the four Hindu *yugas* was therefore, 4320000.

According to a western researcher, the fourth and the last cycle of the Mexicans began in 3373 B. C., twenty solar days after the autumnal equinox of that year or about October 14. According to the periods of their cycles given above, the first Mexican cycle commenced in 16984 B. C., or 13611 years before the beginning of their fourth cycle, when the vernal equinoctial point was situated at a distance of 253·599 degrees from the same point of 1913 A. D. The conjunction of the sun and the moon in that year almost coincided with the autumnal equinox, the figure of the former being 73·105 degrees. It is noticeable that the aforesaid vernal equinoctial point almost coincided with the starting point of the Prajapatya calendar started in the sixth year of the Egyptian era (253 558).

According to Rigveda, the long night used to commence forty solar days after the autumnal equinox which coincided with the sidereal point (73·599 degree) to the beginning of this cycle. The long night, therefore should have commenced on a solar day which now coincides with the full moon of Ashadha (Manwadi day) on which the god Shiva is supposed by the Hindus to go to sleep. A hundred solar days later is the festival of *dhana* (wealth, used in the sense of sunlight in the Vedas) *trayodasi* This festival also coincides with the great Jewish festival held in honour of their prophet Moses.

I think, the Mexicans and the Hebrews were once perhaps Shiva-worshippers. The word 'Moses' means 'one who draws out' and was probably the Hebrew name of god Shiva who was supposed to draw the sun out from darkness. In this connection, I draw the attention of scholars to the phonetic affinity of the word 'Musa' or 'Moses' with 'Mahasu' (the Vedic Mahasura, a name of Shiva). the supreme god of Jaunsaris of the Dehradun district in India.

The second cycle of the Mexicans began 4800 years after the commencement of the first cycle or in 12184 B. C. The spring equinox was situated in this year at a distance of 191·242 degrees from the same point of 1913 A. D. and the conjunction of the sun and the moon took place in that year at 251·060 degrees, or 60 solar days after the said equinox and 30 solar days prior to the midsummer day.

The third cycle of the Mexicans began in 8183 B. C. when the vernal equinoctial point was situated

at a distance of 138·191 degrees from the same point of 1913 A. D. and the conjunction of the sun and the moon took place in the year at 231·707 degrees.

The second and the third cycles were borrowed by the ancient Mexicans from some other nation as I shall show later on when discussing the Phoenician era.

The fourth cycle of the ancient Mexicans began in 3373 B. C. when the spring equinoctial point was situated at 73·199 degrees from the same point of 1913 A. D., and the conjunction of the sun and the moon occurred at 293·115 degrees or two solar months later than the autumnal equinox. Their solar calendar, however, was started twenty solar days earlier than the lunar calendar.

It is to be noted here that during the period intervening between the commencement of the first and the fourth Yuga, the vernal equinoctial point of the former had become the autumnal equinoctial point of the latter, slight difference in fraction being probably due to the proper motion of the star selected by these people as the starting point of their sidereal sphere.

Before concluding this discourse, I may mention that there are strong reasons to believe that the Indians had intercourse with the Mexicans long before the discovery of America by Columbus, as will be clear from the following facts:—

1. Maya, the name of the Mexican race, is mentioned in several old Hindu works as the name of a person

who was a great expert in architecture. He built the palaces of King Yudhishthira at Indraprastha or the ancient Delhi. According to Surya-siddhanta, which is a very standard work on Hindu astronomy, Maya got his astronomical knowledge from the sun-god and it is stated therein that Suryasiddhanta was based on his teachings.

2. In refering to particular dates, the Mexicans did not use the number of past years but the aggregate number of days which had lapsed since their fixed epoch. This practice was also followed by the Hindu astronomers in making calculations.

3. The Mexicans' practice of counting by scores was also prevalent among the Hindu masses.

4. The Mexican division of *yugas* resembled that of the Hindus and there was an exact similarity in the period of the first *yuga* of both the nations, as has already been shown.

Phoenician tribe of the Arctic Race.

The Phoenician lunar calendar was connected with the conjunction of the sun and the moon which is a Kalpadi day or the one connected with the creation era. It coincided in the fifth year of the Egyptian era with the sidereal point 351.608 degree. When this point almost coincided with the spring equinoctial point (351.734) the Phoenician branch of this race started their era. The southern course of the sun then used to begin from the sidereal point 81.734 which almost coinci-

ded with the longitude of the star Beta Tauri and which marks one of the horns of the Bull. It is to be noted that Prajapatya tribe of the arctic race started their era when the star of the other horn of the Bull (Zeta Tauri) marked the beginning of the sun's southern course. The long mid-night used to commence at the beginning of the Phoenician era when the sun reached the sidereal point 211.734 degree which coincides with the Hindu festival called Govatsa or the one connected with cows and calves. It appears therefore that like the Egyptians this tribe also supposed that the part of the zodiac beyond the horizon was the stable of the celestial kine or the invisible dawn. The lunar day was the 12th one preceding the Dewali festival by three days. The 12th lunar day of every month is devoted to the worship of Vishnu the sun-god. The long summer day used to begin at about the sidereal point 31·734 degree. The full moon of the seventh month of the Jewish calender which was current at the beginning of their last era in 3761 B C coincided with the sidereal point 211·695 degree while the full moon of their first month ended at the point 31.793 degree according to their present scheme of lunar calendar and on which day one of their great festivals lasting for eight days begins. These figures almost tally with those mentioned above showing only a very negligible difference. When in the course of time the sidereal point 81.734 degree coincided with the vernal equinoctial point in 4004 B C. the Phoenicians started their last cycle which is the creation era of the Christian nations as well as of the Jews. When in the course of time the position of the zodiac at the beginning of the Phoenician era underwent a change of a sign of 20

degrees the nation evidently started its second cycle. The starting point of the Kali calendar (11. 775) coincided almost with the beginning of the long summer day, while six solar months thereafter the long night used to commence from the beginning of the present seventh month of the Jews. The sun's first rising point after this night coincided with the birth anniversary of Ganesh the son of the god Shiva. When there was a further change of 70 degrees in the position of the zodiac, the long night used to begin at about the solar day which coincided with the Hindu lunar day called Kal-ratri or the night of death, because in the arctic region the sun was supposed to die on this day. When again there was a change of 10 degrees in the position of the zodiac and the whole of the hidden part of it at the beginning of their era became visible the Phœnicians started their third cycle. The long arctic night then coincided with the Jewish fast observed in honour of their sun-god Tamuz who was supposed to die in autumn and revive in spring, while the beginning of the long summer day coincided with the birth anniversary of Ganesh. Four lunar months and a half earlier than this birth anniversary or at about the winter solstice of the time the great Ganpati festival of Maharattas used to occur. In fact the latter festival is in honour of Vinayaka. It appears that the sun-god was worshipped by three sects of the Phoenicians in the sun's three different forms. Tamuz or Dirgha-tama (long night) of the Vedas was the sun's name at the beginning of the long arctic night and he was called Vinayak on reaching the winter solstitial point (middle of the long night) while the sun-god of the bright world was named Ganesh.

A cycle of this nation was preserved by the ancient Mexicans. It began in 12184 B. C. when the spring equinocital point was situated at the sidereal point 191·242 degree and the conjunction of the sun and the moon took place at 251·060 degree or 60 solar days after the said equinox.

Now the question arises as to why this cycle was started from this year and why such a year was selected when the aforesaid conjunction took place exactly one solar month before the midsummer day. It is noticeable that this day coincides, according to solar reckoning, with the *Mitra saptami* and *Bhanu saptami* of the Hindu month of Margasira. I may observe that the celeberation of the above festivals on the same date is an indication of the fact that the sun of the long summer day was called Bhhnu, the controlling spiritual deity of which was Mitra.

It may be noted that there is no other day for the worship of Mitra among the Hindus, and that Mitra was a god of the Pars's specially as well as a Vedic deity. In my opinion, the ancients emigrated from one of their arctic abodes at about that year and settled in another arctic country where the sun never used to rise or set for two tropical months. Of course, the period of the long day must have varied in different localities of that country, but they fixed the aforesaid meridian for the purpose of reckoning time from that place.

I infer from these facts that this cycle was started in connection with the emigration of the ancients from

one arctic region to another. The last cycle of the Phoenicians was started as already stated in 4004 B.C. when the southern course of the sun used to begin from the sidereal point 171·734 degree. A full moon coincided in that year with the sidereal point 181.789 degree or almost ten solar days after the summer solstice. This day coincides with the full moon of the month of Bhadrapada of the Kali calendar which ends at 171·856 degree and on the day previous to it a fast is observed in honour of God Anant or endless. It appears therefore that he was the god of the long day and was called by that name owing to the fact that the sun never used to rise or set but made a spiral movement during that day Its period was equal to about twenty solar days at the time. The winter solstice then used to coincide with the birth anniversary of the imprisoned goddess. It appears therefore that the ancients lived at the time in that part of the arctic region where the long day lasted for twenty solar days while the period of the long night was of a shorter duration lasting for a few days only. According to Valmiki Ramayan the Samvedi Brahmans renew their sacred thread on the full moon of Bhadrapada which as already stated coincided with the summer solstice at the time. The Jews however do not reckon the number of their past years from this creation era but from 3761 B.C. when the spring equinoctial point coincided with the sidereal point 78·419 degree. This was the starting point of the sun's southern course at the time when the Romans as already stated started their second cycle. The Jewish nation was therefore either a branch of the Roman tribe or of the Phoenician tribe. This cycle was connected with some other cycles as will appear from the following facts.

When there was a change of 80 degrees in the position of the zodiac at the beginning of the above cycle, the southern course of the sun used to begin from the point 358·419 degree, which coincides with the great Hindu festival of Mahavaruni in honour of Varuna the sun-god of the long summer day, if it falls on a Saturday which is a holiday among the Jews. It is noticeable that a similar festival called Saturnalia was celebrated by the ancient Romans in the month of December. According to Roman traditions this festival once coincided with the summer solstice. The sun's first rising day after the long night coincided with the Hindu festival of Vaikuntha or paradise at the sidereal point 228·419 degree. The third cycle of the ancient Mexicans began in the year 8183 B. C. when the southern course of the sun used to begin from the sidereal point 228·191 degree. These two figures show a negligible difference.

The midsummer day of that year coincided with the Hindu festival of *Vaikuntha* (paradise). On the twelfth lunar day preceding the festival, the worship of God Vishnu commences. Six days later, a fast in honour of the goddess Dawn, called *Saubhagya-sundari* (beautiful married lady) is observed. According to the Rigveda, the Vedic gods were supposed to marry the Dawn with the sun after the long summer day. This shows therefore, that the country in which the ancients were residing at the time was situated at a place where the long summer day used to last for about seven ordinary days.

According to the same Veda, there a was sacred

well at the highest foot (north solstitial point) of the god Vishnu.

The Vedic people evidently belonged to the same arctic tribe as the Hebrews; because the peculiar custom of temporary widow-marriage, called *niyoga*, was prevalent amongst both the people, *vide* the Rigveda and Old Teatament.

14. CHINESE.

The last era of the Chinese was started in 11011 B. C. when the vernal equinoctial point was situated at a distance of 42·023 degrees from the same point of 1913 A. D. Their signs differed by about a degree from those of the Babylonians and Malabarians. The Chinese evidently borrowed them from these nations and made slight changes to suit the equinoctial and solstitial points at the time.

The other known era of the Chinese commenced in 2277 B. C., when the vernal equinoctial point was situated at a distance of 58·097 degrees from the same point of 1913 A. D. This era was evidently started from a half sign instead of a sign, as the Chinese divided the zodiac into signs as well as half signs.

CHAPTER VII.

The Arctic Origin of the Division of Zodiac and of Time.

Out of 360 degrees into which the sun's path is divided, 100 degrees lay, as already pointed out, beyond the horizon of the place which the arctic people had fixed as the point of their meridian.

These people assumed, for the sake of convenience, the duration of their long winter night and of the long summer day as being equal to the sun's passage through 100 degrees each though actually they varied in different localities and were unequal everywhere to a small extent, owing to the Law of Refraction of Light.

On account of the peculiar climatic conditions existing in the arctic country, they could not adopt the ordinary day and night as the sole measure for reckoning time and were, therefore, obliged to make use of various means for the purpose, as is evident from Jyotisha-Vedanga, an ancient astronomical work.

The moon was the most convenient means for measuring time, owing to its phases and its revolutions through the zodiac. It was, however, not visible for some months in the arctic home of the ancients during the long summer day, when the sun never used to rise or set. Excluding this period, which was equal to three months and thirteen lunar days, the arctic year consisted of nine lunations or synodical* lunar months

---

*A synodical lunar month is equal to the period between two conjunctions of the sun and the moon. This period is also called a lunation.

less two lunar days. A lunar month generally begins either from a new or a full moon or from the conjunction of the sun and the moon, one lunation being equal to the sun's passage through 29·106 degrees of the ecliptic. The year was thus divided into ten parts comprising nearly nine lunar months and one long summer day.

This was the origin of the practice of counting by tens and of the design of numerals upto that figure. It is noticeable that the last figure Zero resembled the sun's circular movement in the circumpolar part of the zodiac, which was the tenth period.

As the period of the sun's entire passage in the ecliptic (Sun's path) is equal to twelve lunar months and about eleven lunar days, it was necessary for the ancients to devise some scheme for the adjustment of the lunar calendar to the solar calendar. which latter was based on seasons and was equal to the period in which the sun starting from the vernal equinoctial point came to it again. As $5\frac{5}{12}$ solar years were almost equal to 5 lunar years and to five synodical revolutions of Jupiter, one such revolution being equal to the time which passed between two conjunctions of the sun and the Jupiter, the arctic people designed a cycle of five Jupiter's synodical years and divided the solar year into twelve solar months.

A somewhat more accurate system of adjustment was also devised, based on the division of the ecliptic into signs. As 14 revolutions of the moon were equal to $1\frac{17}{360}$ revolutions of the sun, the ancients divided the

zodiac and the ecliptic in 36c degrees each. Similarly they divided the ecliptic into 36 parts of 10 degrees each as 61½ lunations were equal to $4\frac{35}{36}$ revolutions of the sun or its passage through 179 such parts. These were the half signs of the Mexicans who used a sign of 20 degrees each and evidently adjusted their calendar after the lapse of 123 lunations. The nations using the schemes of 12,9 and 6 (Ritus) signs of 30, 40, and 60 degrees each used to adjust their lunar calendar after the lapse of 184½,246, and 369 lunations respectively. This was the origin of the signs and the Vedic ritus. The sun remained invisible during the long winter night while passing through five signs each as they were below the horizon.

The sun never used to rise or set in about five signs situated in the upper part of the zodiac during the long summer day; while it used to cause ordinary days and nights during its passage in the remaining eight signs or thereabout. Four of these were situated between the rising point of the sun after the long winter night and the commencement of the long summer day; while the remaining four signs intervened between the points which coincided with the end of the long day and the commencement of the long night.

Commencing from the rising point of the sun after the long night, the spring and the autumnal equinoxes occurred at the end of the second and of the eleventh sign respectivly; while the summer and the winter solstices used to take place at the middie of the seventh and the sixteenth signs. Thus, the four natural divi-

sions of the arctic zodiac of eighteen signs comprised four, five four and five signs.

The above-mentioned division of the ecliptic into 18 signs was, therefore, based on seasons; but the sun's passage through them was evidently measured by the moon's sidereal motion throughout the year, with the exception of the long summer day when there was no moon. The time in the latter period was reckoned by the number of the sun's circular revolutions which were caused by the earth's movement on its axis, one and one-sixtieth revolution being equal to the sun's passage in a degree. During the rest of the year, time was reckoned, as I have pointed out by the moon's movement in the zodiac.

The ancients divided the year of 360 solar days into small periods of 13,18 and 7 solar days each owing to the following reasons. 134 lunar days were equal to the sun's passage in 130 degrees or 4 small periods of 13 solar days each, while $5\frac{1}{2}$ lunar months were almost equal to 160 solar days or 20 small periods of the second kind. Similarly 19 lunar months were almost equal to 79 weeks of 7 solar days each.

The ancient Mexicans, who called themselves Mayas, did not use the modern system of reckoning, but had a particular system of their own. They had figures for numerals from one to twenty (number of degrees in their one night) and, instead of units, tens, hundreds etc., they used the following series:—

Kin......1 to 19
Unal ......20 and its multiples upto 380,

Tun..... 400 and its multiples upto 7600.
Katun..... 8000 and its multiples upto 152000,
Baktun...... 160000 and it multiples upto infinity.

The Mexicans used, as measures of time a week of 13 solar days, a month of 20 such days, a year of 360 days, a cycle of 52 years and period called Tzolkin of 260 solar days. The last measure is notice-ble; considering the fact, that in the original abode of the Arctic race, the visible part of the zodiac or the bright world comprised 260 degrees and the arctic year consisted of only 260 solar days (about 263 ordinary days), excluding the period of the long winter night. A solar day is equal to the sun's passage in a degree and is slightly longer than the ordinary day of 24 hours. In some of the hilly tracts of northen India, solar days are still used for reckoning time and are known as *gatas*.

As regards the Mexican week of 13 solar days, it is noticeable that the sun's passage in 29 such weeks was equal to the moon's 14 complete revolutions. This measure of time was, therefore, very useful for astronomical purposes. The arctic practice of the measurement of time by means of the sun's passage in the zodiac is evident from the great importance, given in southern India, to the lunar days on which the moon happens to coincide with the Krittika nakshatra. These lunar days are called locally by the name of Krithigai. In this connection it is to be noted that the sun's passage in 350 degrees is equal to 13 revolutions of the moon and nearly equal to twelve lunations. This was, I think, the basis of

the solar calendar of ten months of 35 days each referred to in the Arthashastra. The scheme of 28 nakshatras was connected with this calendar, because the three revolutions of the moon plus its passage in 20 complete nakshatras were equal to the period of the long arctic night.

Reckoning from the moon's position in Krittika, the sunrise after the long night must have taken place at the end of the twentieth nakshatra called Abhijit (or the Victor), which was so named because the sun, after conquering the powers of darkness, used to reappear when the moon was in that nakshatra. This fact is alluded to in the Taittiriya Brahmana wherein it is stated that the Devas (or the powers of light), over powerd Daityas (or the powers of darkness) in this nakshatra. According to a verse in the Brahmanda Purana (Venkatesvara Press edition), Janardana, or God Vishnu was born on the night called *Jayanti*, in the *abhijit* nakshatra. The *Hasti* (elephent) months of 40 days, referred to in the Arathashastra, were based on the arctic division of the zodiac into nine parts of 40 degrees each. This division was made in consideration of the fact that the sun's passage in 320 degrees or 16 Mexican signs was almost equal to eleven lunar months. Thus eleven lunar months were *also* equal to eight *hasti* months of 40 solar days each.

For the purpose of measuring the moon's motion in the zodiac, the ancients divided the zodiac into as many parts as suited to the various calendars used by the several branches of the Arctic Race.

The parts of the zodiac are called nakshatras or asterisms. Four schemes of nakshatras have come down to the present time which consist of 27, 28, 30 and 36 asterisms.

The signs and the moon's asterisms were evidently first designed at the commencement of the Egyptian era in 25653 B. C.; but they were perhaps modified from time to time by the various branches of the Arctic Race in connection with their own cycles. As a revolution of the moon is equal to the sun's passage in $26\frac{13}{14}$ degrees, the scheme of 27 asterisms was the most convenient one for the purposes of measuring the sun's motion by means of the moon's movements. Moreover, the eleven lunar months were almost equal to the sun's passage into 24 such nakshatras or, as said above, to 320 degrees or 16 Mexican signs. It was convenient for astronomical calculations, as the Mexican sign was equal to one asterism and a half, while the other kind of sign comprising 30 degrees was equal to two asterisms and a quarter.

The scheme of 28 asterisms was apparently designed by those arctic people who adopted the calendar commencing from the long day and used the synodical lunar months as the basis of their reckoning time, as well as by those who used to measure the long night by means of moon's revolutions, as in the Krithigai calendar.

One lunation was nearly equal to two asterisms and a quarter and three signs were exactly equal to seven asterisms of this scheme. At the same time,

the long summer day was equal to 106 lunar days or to the sun's passage through eight asterisms.

Some tribes adopted the scheme of 30 nakshatras, because 99 lunar days were equal to the sun's passage in eight such nakshatras or 96 degrees, and a month of 35 solar days of the ten months' calendar was equal to one revolution of the moon plus its passage in nine such nakshatras.

The scheme of 36 asterisms was connected with the solar signs, as one asterism was a half sign of the Mexicans; while three asterisms were equal to one sign of the other kind, *i.e.*, of the scheme of twelve signs of 30 degree each.

The Vedic division of time is mentioned in the hymn III-10 of the Atharvaveda. The measures of time enumerated therein are *ritus*, *artavas hayanas*, *samvatsaras*, *samas* and *masas*, which have been translated to mean 'seasons', 'annual parts', 'groups', 'years' 'half-years' and 'months'. The translation of these words does not seem to be quite correct. *Ritus* and *artavas* were, of course, the seasons and parts of seasons, the word *artava* being apparently derived from *ritu*. There is no doubt about the word *masa* which means a lunar month. The three remaining words are, in classical Sanskrit, equivalents of 'year' but there must have been some difference in their meaning in the Vedic period, as appears from verse 9 of the above-mentioned hymn. In my opinion, *hayana* meant a tropical year which was divided into *ritus* and *artavas*. *Samvatsara* was the lunar year;

because its parts (lunar months) were of equal durations. *Samas* were probably the parts of the long summer day which were also of equal periods, one part being equal to a revolution of the sun in the circumpolar part of the zodiac.

In verse 2 of this hymn, night is referred to as the consort of the Year. Probably, the long arctic night is meant here, which used to precede the year of the bright world in the arctic region *Ashtaka*, which ordinarily means the last day of the first quarter of a lunar month, is also spoken of, in this hymn, as the consort of the Year and as the mother of Indra and Soma. The first rise of the sun after the long night occurred, according to the Vedic calendar, on the eighth day; and it was, therefore, called the mother of the gods named above. It is to be noted in this connection, that the Hindus perform some religious ceremony in *ashtakas* and the great Jewish festivals of the Law of Moses and Passover are also held on certain *ashtaka* days.

The ancients designed various kinds of cycles, or *yugas*, for reckoning long periods as well as for the purpose of adjusting the lunar to the solar calendar. I have already described the five-year cycles based on Jupiter's synodical revolutions.

So was the case with the cycles of 60,600 and 3600 years used by the ancient Akkadians and Chaldeans. It is suspected that the Chaldeans had eleven signs instead of twelve. I think they used a calendar of eleven lunar months which were equal to the sun's

passage in 320.162 degrees or about 16 Mexican signs, and adjusted the yearly fraction of 0·162 at the end of these cycles as there was a difference of 10 degrees or half a Mexican sign in the cycle of 60 years.

The cycle adopted by the Assyrians comprised 43200 years as against the period of the Hindu cycle which was equivalent to 4320000 years. These cycles, I think, were based on the precession of equinoxes and were designed when there was a difference of one degree in a period of 72 years, owing to the retrograde movement of the equinoctial points.

According to the Vedas, the number of Devas, or the luminary objects, was 33. They were, perhaps, identical with the Ratus of the Zend Avesta, which were also 33 in number. The difference between a solar and a lunar year was nearly 10.731 solar days, or 354 solar days in 33 years. If solar and lunar calendars commenced from the same starting point, they would show a difference of six degrees, or half a nakshatra of the scheme of 30, from their original starting point after a period of 33 years.

I think that there was originally a cycle of 33 years, at the end of which, a new cycle from the middle or the beginning of a nakshatra used to be started. There was, thus, a separate Deva for every year and even now, according to Hindu almanacs, a planet is assigned to every year as its ruler. This scheme, I suppose, helped the ancient people in reckoning time and was the basis of the system of assigning particular lunar days to particular Devas. Thus, for example,

Vishnu is regarded the presiding deity of the twelfth lunar days of every month. In support of this view, I may point out that there was a difference of 10.731 solar days, or a deva, between the Jewish and the Kali calendars.

On a similar principle there was also a division of the solar year into five parts, which is mentioned in the Mahabharata and the Atharvaveda. One of these parts consisted of 16 solar days and it was devoted to ceremonies relating to the departed souls. The rest of the year consisting of 344 solar days was divided into four parts of 86 solar days each, because each part was almost equal to eight of the above mentioned 33 Devas, (thus—10·728×8=85.824 or nearly 86).

Before concluding this chapter, I may say a few words regarding a general misconception of modern oriental scholars. They have presumed on insufficient grounds that the zodiacal signs were unknown to the Hindus till they came in contact with the ancient Greeks. I give below instances of ancient Hindu writings in which the signs are expressly mentioned.

1. It is stated in the Brahmanda Purana that the vernal and autumnal equinoctial points were at the end of the signs of Ram and Libra respectively.

2. A very old Sanskrit verse is quoted in Nirnaya-sindhu, according to which, the great Maghi festival on the full moon of Magh occurred when the sun was in Sravana nakshatra, moon and Jupiter in the sign of Lion, and Saturn at the end of Ram.

The signs mentioned in this verse were not based on the present scheme of nakshatras, as I have shown already.

3. According to another verse, often quoted in the Benares almanacs, the festival of Ganga-Dasahra occurred when the moon was in Hasta nakshatra and the sun in the sign of the Bull.

4. There is a book, named Narapati-jaya-charya which treats of primitive astrology which was in vogue before the system of foretelling events by means of horoscope was invented. The author of this book claims that he has based his work on some very ancient works known as *Yamalas*, *e. g.*, *Brahma yamala Rudra-yamala*, etc. According to a statement in this book, the first sign was the Bull and the last Ram, beginning from east. This shows that the spring equinox used to occur at the beginning of the Bull at the time when those ancient works were written and that they were certainly earlier than the Brahmanda Purana, according to which, the said equinox had receded to the end of Ram. At present this equinoctial point is retrograding in the sign of the Fishes.

The present system of astrology was evidently invented at the time when the vernal equinoctial point was in the sign of Bull. The solstitial colure then separated the signs of Cancer and the Lion on the north and those of Capricorn and Aquarius in the south. The first six signs of the southern course (*viz*, Lion, Virgin, Libra, Scorpion, Archer and Capricorn) were

allotted to the Sun, Mercury, Venus, Mars, Jupiter and Saturn respectively; while those of the northern course (*viz.*, Aquarius, Fishes, Ram, Bull, Geminii and Cancer) to Saturn, Jupiter, Mars, Venus, Mercury and the Moon.